

THE MILITARY TECHNOLOGY OF CLASSICAL ISLAM

VOLUME II

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PART THREE

Tactical Developments
and the Military Technology of Islam



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CHAPTER 1

TACTICS, TECHNOLOGY AND MILITARY ORGANIZATION IN PRE-ISLAMIC ARABIA

Of all those areas that were to become parts of the Muslim world, less is known about military technology and organization in the original Arab homeland than anywhere else, with the possible exception of Berber North Africa. Pictorial representations are virtually unknown from the Arabian peninsula itself, while the dating of much supposedly pre-Islamic verse is highly debatable. Even those verses that almost certainly come from the Jāhiliyyah are probably so late that they should most usefully be regarded, along with the rest of such poetry, as illustrating the cultural situation in which Islam was born, rather than the general background of the Arabian peninsula as a whole.¹

Descriptive material from neighbouring, or only partially Arab, cultures may be the most reliable when studying the Arabs' general background from the standpoint of military technology. These sources indicate that some widely accepted views portray the Arabs as more backward than they really were. It has, for example, quite recently been maintained that they knew neither the coat of mail nor the helmet.² Others overemphasize one external influence. Thus some say that the military traditions of northern Arabia were thoroughly Byzantine like Syria and Egypt,

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1. U. Montgomery Watt, The Majesty that was Islam, (London 1974), pp. 77-78 and 90-92; C. Pellat, "Jewellers with Words," in The World of Islam, S. Lewis edit., (London 1976), pp. 143-145.
 2. A. S. Melikien-Chirvani, Le Roman de Varqe et Golšāh, Arts Asiatiques, XXII (1970), pp. 38-39.

with short lamellar and scale cuirasses, mail hauberks and round shields, and that Hellenistic mail armours were common in central Arabia,³ or that the Arabs of western Arabia, Yemen, Hijāz and the Syrian frontier, fought in the Sassanian style with helmets, mail hauberks, long straight swords and lances.⁴ Some tend to oversimplify by apparently relying on one source to emphasize the predominant role of archery among the ancient Arabs,⁵ or by maintaining without qualification that Arab archery was inferior to that of their foes.⁶

Surprisingly, perhaps, one must often return to earlier scholars such as A. von Kremer to find a more reasoned analysis of the military capabilities, equipment and organization of pre-Islamic Arabia.⁷ Yet even here, I believe, there remains a tendency, encouraged by the Muslim's own view of his cultural origins, to portray the pagan Arab as excessively "simple," that is backward.

The nomadic, semi-nomadic and settled Arab tribes of northern Arabia and the Fertile Crescent were almost certainly more sophisticated

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3. M. V. Gorelik, "Oriental Armour of the Near and Middle East from the eighth to the fifteenth centuries as shown in works of art," in Islamic Arms and Armour, R. Elgood edit., (London 1979), p. 31.
 4. M. Lombard, Les métaux dans l'ancien monde du Ve au XIe siècle, (Paris 1974), p. 35.
 5. D. J. F. Hill, "Some Notes on Archery in the Roman World," Journal of the Society of Archer Antiquaries, I (1958), p. 2.
 6. J. D. Latham, "The Archers of the Middle East: The Turco-Iranian Background," Iran, VIII (1970), p. 97.
 7. A. von Kremer, Culturgeschichte des Orients unter den Chalifen, I, (Vienna 1875), p. 78.

militarily than their southern cousins, while their material culture was in general a poorer version of that of their other neighbours. What has, however, rarely been emphasized is the degree of contact between north and south within the Arab area.⁸ Similarly, it would be hard to overstate the vital military role of those northern tribes in warfare between the Hellenistic and Iranian worlds. Most of the detailed references come from the Romano-Byzantine side, where six cohorts of presumably Arab infantry archers, the *Ulpiae Petraeorum*, are among the earliest to be mentioned.⁹ By the 4th century light cavalry of the Bakr and Taqhlīb tribes were playing a far more prominent, though occasionally equivocal, role between the Sassanian frontier and the Byzantine limes in the Jazīra area.¹⁰ Arab troops, in particular archers, were also recruited to defend these Byzantine limes, and even to command in such positions.¹¹ By the 7th century Arabs, Christian and pagan, could form the bulk of a Byzantine army such as that at Mu'ta in 629 AD.¹² One possibly apocryphal source even has a

8. K. S. al Asali, South Arabia in the 5th and 6th centuries CE with reference to relations with Central Arabia, (Unpub. Ph.D. thesis, St. Andrew's Univ. 1968); I. Shahid, "Byzantino-Arabica: The Conference of Ramla, AD 524," Journal of Near Eastern Studies, XXIII (1964), p. 130.

9. Von Hubert van de Weerd and P. Lambrechts, "Note sur les corps d'archers au Haut Empire," in Die Araber in der Alten Welt, I, F. Altheim and R. Stiehl edits., (Berlin 1964), p. 663.

10. F. Altheim and R. Stiehl, "Die Araber an der öströmisch-persischen Grenze im 4. Jahrhundert," in Die Araber in der Alten Welt, II, (Berlin 1965), pp. 324-327.

11. F. Altheim and R. Stiehl, "Šāpūr II und die Araber," in Die Araber in der Alten Welt, II, (Berlin 1965), p. 344.

12. A. J. Butler, The Arab Conquest of Egypt, (Oxford 1902), pp. 150-151.



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Christian Arab in command of a mixed Coptic, "Roman" and Arab force defending Byzantine Tinnīs during the Muslim invasion of Egypt.¹³

Such evidence might suggest that Arab troops could be more than an ill-equipped rabble of tribal auxiliaries. Nevertheless, this same evidence might also indicate that the Arabs were not a homogeneous whole as far as their military capabilities were concerned. Clearly one must specify just whom one is considering in those culturally and linguistically mixed areas bordering the Fertile Crescent. This is particularly true of earlier centuries when the Arabization of the region had hardly begun. Palmyra and Dura Europos, from the 3rd or 4th centuries, could be seen as Aramaic islands^{13A} in an Arab sea, but although their armed forces were partially, perhaps even predominantly, recruited from surrounding Arab tribes, they should still be regarded as Syrian.

Hatra, by contrast, has been considered both as essentially Arab and as a melting pot of the military traditions of the Semitic east.¹⁴ Here, in the 2nd century AD, there were sophisticated fortifications manned by townsfolk and neighbouring semi-nomadic peasantry. In open battle, meanwhile, bedouin horsemen could drive back Roman cavalry while bedouin archers, many of whom were horse-archers, threatened the life of Trajan himself.¹⁵ Clearly the Arab peoples of these areas were ideally placed to learn from a variety of sources. The Nabateans, for example, probably adopted

13. Ibid., p. 353.

13A. F. Altheim and R. Stiehl, "Odainat und Palmyra," in Die Araber in der Alten Welt, II, (Berlin 1965), pp. 269-270.

14. F. Altheim and R. Stiehl, "Hatra," in Die Araber in der Alten Welt, IV, (Berlin 1967), p. 244.

15. Ibid., p. 249.

the war-horse from their Syrian neighbours. As early as the 1st century BC they had evolved their own essentially bedouin tactics of repeated attack and retreat, karr wa farr, using both camels and cavalry, though such a strategy may also reflect Parthian influence.¹⁶

The Ghassanids and Lakhmids were the last in a long line of client Arab states to be involved in the age-old ^{frontier} struggle between Hellenism and Iran, yet even they appear to have remained dependent on their respective protectors for much war material. It has been suggested that the Byzantines merely loaned the former full military equipment in time of war, otherwise storing it in their arsenal at Busrā.¹⁷ The Sassanians apparently did much the same for the heavy cataphract cavalry of the Lakhmids, drawing upon their arsenals at Ukbarā and Anbar.¹⁸ These arrangements may account for an apparent contradiction between the Arabs' military capabilities in some spheres and their supposedly limited skills in such areas as siege warfare. Belisarius himself stated that the Arabs under his command were unable to build fortifications,¹⁹ whereas the Arab rulers of Hira were already known to be using complicated siege engines in the 3rd century.²⁰ Far to the south, in Yemen, the Sabaeen kings were also known to have built fortresses

16. Ibid., pp. 296-297; E. Merkel, "Erste Festsetzungen im fruchtbaren Halbmond," in Die Araber in der Alten Welt, I, F. Altheim and R. Stiehl edits., (Berlin 1964), pp. 299-301.

17. F. Altheim and R. Stiehl, "Dhū Nuwās," in Die Araber in der Alten Welt, V/1, (Berlin 1968), p. 316.

18. Altheim and Stiehl, "Sāpūr II and die Araber," pp. 351-352.

19. J.R. Partington, A History of Greek Fire and Gunpowder, (Cambridge 1960), p. 186.

20. Ibid., p. 189.

a century or so later.²¹

Certain specifically, though not solely, Arab military characteristics were, however, already appearing. These would be seen again during the first wave of Muslim expansion. Hatra and Hira, for example, developed from nomadic encampments and may be seen as the prototypes of Kūfa, Dayrawān, Baghdād and Sāmarrā.²² There was also an exceptional emphasis on ruses and tactics,²³ a desire to exercise maximum force and at the same time refrain from resisting "à l'outrance" in the face of impossible odds,²⁴ all of which indicate an *eminently* rational attitude towards warfare. Finally there was the primacy of the bow among the desert Arabs who were described by a Syrian, probably in the 5th century, as "Saracens who pass their life in archery and raiding."²⁵ But were these raiders infantry or cavalry, and if the latter did they shoot at rest, like Byzantine horse-archers, or in motion like the Parthians? Typically, perhaps, such contemporary descriptions pose as many questions as they answer.

Though they are largely seen through the eyes of their more settled neighbours, we can thus build up a picture of these north Arabian warriors. Far less may be said of central and southern Arabia. Nevertheless, all these areas were in sufficiently close

21. J. Ryckmans, L'Institution Monarchique en Arabie Meridionale avant L'Islam, (Louvain 1951), p. 231.

22. F. Altheim and R. Stiehl, Die Araber in der Alten Welt, III, (Berlin 1966), p. 7.

23. H. Lammens, "Les Ahābīs et l'organisation militaire de la Mecque au Siècle de l'Hégire," Journal Asiatique, 11 ser. VIII (1916), p. 432.

24. Montgomery Watt, op. cit., pp. 32-34.

25. A.H. N. Jones, "Asian Trade in Antiquity," in Islam and the Trade of Asia, (Oxford 1970), p. 6.



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contact for them to have probably shared many military traditions. The Nabateans were, of course, vitally concerned with trans-desert trade routes from the Gulf, while Palmyra's links with central Arabia were of long standing.²⁶ Similarly, Lakhmid Hira played a vital role in Arabian politics, having a direct link across the peninsula to the Himyarite south. Hira was, in fact, a centre through which outside, that is Iranian, cultural and military influences penetrated south.²⁷ Such cultural contacts may have been reinforced during an apparent Yemeni domination of central Arabia and even, perhaps, the entire Gulf area in the early 4th century.²⁸ Iranian military influences would similarly have been felt during the subsequent Sassanian counter-attack under Shāpūr II.²⁹ One feature does, however, differentiate the armies of northern Arabia from those of the southern and perhaps also central regions. This was the south's lack of cavalry. Although under Sabaean rule Yemeni kings employed regular troops and auxiliary contingents from both south Yemeni and central Arabian tribes,³⁰ the limited available inscriptions refer only to infantry and camel-mounted warriors.³¹ Indeed one Yemeni leader was, in desperation, obliged to request a force of asāwira heavy cavalry from the Sassanian king.³² Such Sassanian heavy cavalry were, in fact, stationed in

26. Al Asali, op. cit., p. 87.

27. Shahīd, loc. cit.

28. Al Asali, op. cit., pp. 52-55.

29. Ibid., pp. 55-59.

30. Ryckmans, op. cit., pp. 134 and 231.

31. Al Asali, op. cit., pp. 101-102.

32. Ibid., p. 304.

Oman. The arrival of Iranian asāwira and marāziba, or "marcher lords," followed Khusrau Ānūshīrvān's reorganization of the Sassanian province of Mazūn, that is the coastal and settled parts of Oman, in the 6th century. How far this class of Persian landed military aristocrats influenced the local Arab aristocracy is unclear. What is known, however, is that the Julandā, or local Arab leadership, survived the collapse of Sassanian authority and continued to dominate Oman until the end of the 8th century.³³ The least one may assume is that here was another important and obvious channel via which Sassanian military technology probably filtered into Arabia.

Another interesting, and in a way complementary, north-south link was that recorded between the Arab Ghassānids and the Ethiopian conquerors of Yemen,³⁴ both of which peoples were of course within the Byzantine sphere of influence. Both also employed cavalry with great success against their central and southern Arabian foes, the Ghassānids in particular being famed as cavalry and as mobile camel-mounted infantry.³⁵ Ethiopian and Nubian peoples across the Red Sea may, for various reasons, be seen as a rather distorted mirror of their Arab neighbours in the Yemen and Ḥijāz. Because of its close political links with Byzantium, we often know more about the military traditions of the western coast of the Red Sea than we do of the

33. J. C. Wilkinson, "The Julanda of Oman," Journal of Oman Studies, I (1975), pp. 99 and 103-104.

34. I. Shahīd, "Ghassān," Encyclopedia of Islam, second edition, II, pp. 1020-1021.

35. D. R. Hill, The Mobility of the Arab Armies in the Early Conquests, (Unpub. M.Litt. thesis, Univ. of Durham 1963), p. 19; F. Altheim and R. Stiel, "Das christliche Aksum," in Die Araber in der Alten Welt, V/2, (Berlin 1969), p. 232; Shahīd, "Ghassan," loc. cit.

eastern. Like Arabs, the Ethiopians were regarded by Pliny the Elder primarily as archers.³⁶ The Bāja and nomadic northern Ethiopians also used large numbers of camels in their warfare,³⁷ while according to Arab tradition the tribes of Yemen and Hījāz learned how to use the bow from the Nubians.³⁸ As mentioned above, the Ethiopians apparently made extensive use of cavalry during their operations in the Yemen. It has also been suggested that many of their warriors remained in the area to serve as mercenaries after the Arab and Sassanian counter-attack, though whether as infantry or cavalry is unknown.³⁹ This introduces the difficult question of the ahābīsh. Were the soldiers so-named in the Hījāz Arabs or Ethiopians? In Yemen they were apparently the latter.⁴⁰ Whatever the answer, it is likely to reinforce further the contention that the military traditions and combat styles east and west of the Red Sea had much in common.

Competing with the Ethiopians for the control of Yemen, and perhaps also having its own influence on southern Arabian military traditions, was Sassanian Iran. While there is some doubt that the above-mentioned asawira (Pahlevi: asvarān) heavily armoured Persian cavalry actually reached the area, Daylamī infantry certainly did arrive.⁴¹ At that period, as later, these troops had a fine reputation

36. D. H. F. Hill, loc. cit.

37. Altheim and Stiehl, "Das christliche Aksūm," p. 226.

38. Al Mas'ūdī, op. cit., ^{vol. II,} pp. 382-383.

39. Lammens, loc. cit.

40. Lammens, op. cit., pp. 433 and 441-442; W. Montgomery Watt, "Aḥābīsh," Encyclopedia of Islam, second edition, III, pp. 7-8.

41. A. Christensen, L'Iran sous les Sassanides, (Copenhagen 1936), p. 362.

and fought with the weapons that they were later to make famous throughout much of the Muslim world.⁴²

While documentary evidence concerning pre-Islamic Arab warfare is generally sparse, purely descriptive references to the warriors involved are even more so. One such states that the Saracens were "long-haired".⁴³ This is of some use when identifying possible Arab warriors in the limited available works of art, as most other warriors appear to be *closer cropped*! In specifically Arab regions such as Hatra and south Arabia, similarities of hair-styles may only be useful as evidence of cultural links between otherwise barely related peoples (Figs. 1, 27 and 28). Where, on the other hand, there is some doubt as to the nationality of the subject, as in 3rd century Dura Europos (Fig. 42), or where a story such as the "Selling of Joseph" on a 6th century Byzantine ivory throne might already suggest an Ishmaelite Arab subject (Fig. 23), such a written description may be used as further evidence that the long-haired subject is an Arab. Elsewhere it can only suggest that the figure in question could represent an Arab (Fig. 21).

It has also been suggested that the wearing of two swords, or of a sword and a dagger, was characteristic of the pre-Islamic Arabs.⁴⁴ While it may indeed have been typical of much of the Arab area, appearing at Hatra and elsewhere, the fashion itself is, I believe, of Iranian origin and was widespread throughout the east. Hence it is of little value when attempting to identify a subject.

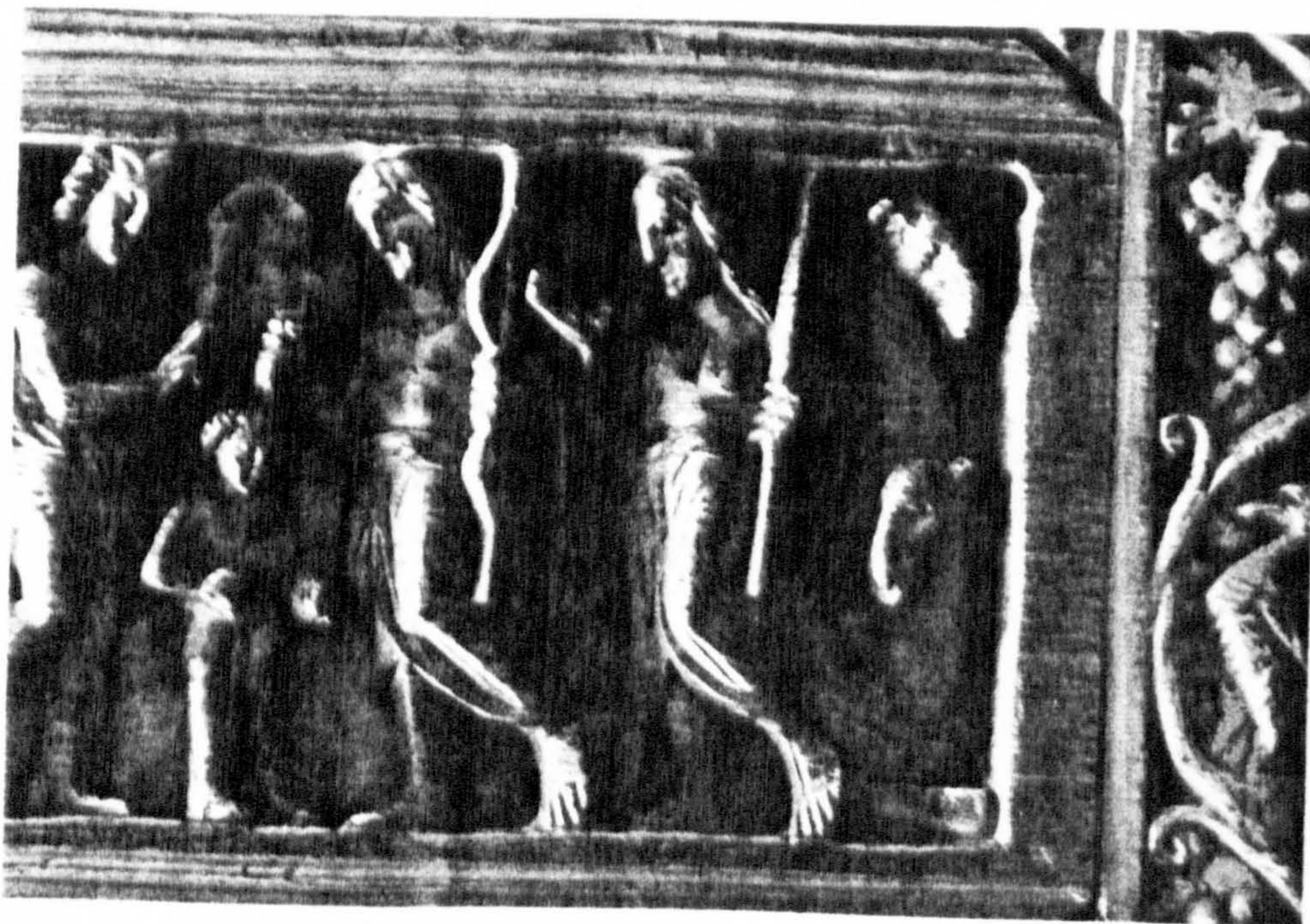
42. C. E. Bosworth, "Military Organization under the Būyids of Persia and Iraq," Oriens, XVIII-XIX (1965-1966), p. 147.

43. Dutler, op. cit., pp. 15-151.

44. H. Seyrig, "Armes et costumes iraniens de Palmyre," Syria, XVIII (1937), p. 30 and 30 n.9.



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There are indeed few pictorial sources that can definitely be said to show Arab warriors, except some in Yemen. Those of Hatra are overwhelmingly Iranian in style. One may, however, assume that this was equally so of Hatra's military equipment, at least that which was used by an élite who are probably reflected in the surviving sculptures. Here swords are long and straight, with long, simple or flared hilts. They are generally slung from a loose sword-belt, often with a characteristic Iranian scabbard-slide (Figs. 24, 29 and 30). Rarely does the Mediterranean-style baldric appear (Fig. 26), though even here it carries an Iranian-type sword. Surviving weapons are limited to some very rusted 2nd century iron spearheads, plus bronze arrowheads of types A, B, C, M and T, two- and three-bladed, both tang and socket types. A horse-bit also excavated at Hatra is, perhaps significantly, of the snaffle-psalion type at that time generally associated with Central Asia and to a lesser extent Iran, rather than the simple snaffle bit or bridoon used in Rome and the west. For the armour of Hatra we have even less information. A fragment of 2nd century iron mail, fused into a mass, and a domed bronze shield boss with a long tube or spike at the front (Fig. 31) have been excavated. A strange, rather Hellenistic, 1st century statuette (Fig. 26) wears either a scale skirt or a short-sleeved scale hauberk under a sleeveless shirt. Various aspects of Hatra costume will, in fact, be echoed in Umayyad works of art, while a few styles such as the head-band of a supposedly 1st century bust in Mosul Museum will persist in various forms throughout much of the early Islamic period (Fig. 28).

In contrast to the Iranized élite of Hatra, we may see ordinary north Arabian tribesmen among those unfortunately disarmed Arab captives in a rock-carved "Triumph" of Shāhān II at Bishāpūr (Fig. 52).

From the other side of the desert barrier comes an undated carving from the Rushaydah area (Fig. 13) which the directorship of the Suwaydā Museum considers might portray a Ghassānid warrior. No reason for this attribution appears to have been published, although the carving's very simplified sword does have similarities with early Islamic weapons.

From a later period we have a Coptic textile showing the "Sale of Joseph" (Fig. 136). Here the Ishmaelite trader appears as a dark-faced horseman armed with a mace, later to be regarded as a typical Arab weapon, and wears a head-cloth beneath a pointed helmet. Surely this is an Arab warrior, crude as the representation might be. But since this textile is probably from the 7th century, it should perhaps be placed among evidence for the first Islamic period.

By association alone we may regard the camel-riding warriors of 2nd and 3rd century Palmyrene and Dura Europos sculpture as Arab, in equipment if not necessarily in origin (Figs. 10, 11 and 32). These are apparently unarmoured men, armed with large-bladed spears, small round shields slung on the animals' flanks, and in one case a possible quiver on a baldric to the right hip. They are generally less well equipped than their infantry or cavalry counterparts, which I take to indicate that here we have armed traders, not warriors as such. Unfortunately, the only camel rider that I have found from south Arabia is on an undated Sabaeen carving in San^Qa' that is too mutilated to be of much use.⁴⁵ Other equally undated and crude carvings from Sabaeen or Himyarite Yemen show spears and an apparently single-edged sword (Fig. 2). The finest such south Arabian frieze shows, surprisingly considering the wealth of evidence against the widespread

45. San^Qa' Museum (Cat. No. 31.300.1751), in Jawad ^CAlī, Tarīkh al ^CArab qabl al Islām, vol. V (Beirut 1956).

use of horses in the Yemen, a cavalryman with a long spear (Fig. 3).

Inadequate as this total of evidence might be, it does, I suggest, show the Arabs of north and south to be *not* especially poor in weaponry, nor in military technology, nor in military organization. In certain respects they parallel the supposedly backward German tribes along Rome's northern frontier. Here were peoples who lacked neither martial drive nor basic military capabilities, but who did lack both political cohesion and a reason to put all their efforts into overrunning the Romano-Byzantine or Iranian defences. In both cases a selected few such tribes were "trained" by their future victims for their own ends, namely to act as auxiliary troops under an imperial banner and to keep in check those "untamed" tribes further from the frontiers of civilization. Ironically, the final result seems to have been strangely similar north and south, though separated by two centuries.

CHAPTER 2

THE FIRST MUSLIM ARMIES

It is generally agreed that the tactics, technology and organization of the Muslim armies developed considerably from the time of Muhammad to the ^cAbbāsid revolution. The military reforms of Marwān II, the last Umayyad Caliph of Syria, are similarly regarded as marking a change from primitive Arab tribal armies to more professional forces that could take a place among their sophisticated Middle Eastern contemporaries. Yet, a closer investigation would suggest that Marwān's reforms reflected military changes rather than stimulating them.

It is, however, difficult to justify another moment at which to separate the infantry-dominated early Muslim Arab armies from those possibly cavalry-dominated, and certainly more cosmopolitan, forces that succeeded them. Since no obvious date offers itself on technological or tactical grounds, it may be necessary to select a convenient year in the political history of early Islam. The death of ^cAlī in 661 AD, and the consequent establishment of the Umayyad Caliphate as a relatively straightforward^c dynastic state, would thus be an obvious choice.

Muslim armies of the early period, their equipment and tactics, have, of course, already been studied in detail by a number of scholars,¹ while others have analysed the war-like verses of those Arabs of Arabia

1. Hill, The Mobility of the Arab Armies in the Early Conquests, passim; Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," passim; Fries, op. cit., passim.

who filled the armies of the Prophet and the Rāshidūn Caliphs.²

Rarely, however, has an effort been made to see this subject in relation both to neighbouring cultures and to subsequent periods.

Illustrated Islamic material from these early decades is non-existent, while artifacts are at best of doubtful date and authenticity. Hence, it is hardly surprising that few have tried to describe the actual appearance of the troops and equipment in question. Yet a handful of potentially useful pictorial sources do survive from neighbouring or conquered cultures, while it may also be possible to see developments of such early Islamic military technology in the barely better illustrated Umayyad era.

Before attempting to shed a little light on this aspect of the material culture of 7th century Islam, the known military traditions of the civilization must be outlined. It has recently been suggested that 7th century Arabia was not poor in weapons, and may indeed have been relatively richer than its neighbours, considering its small population and the fact that a high proportion of these were warriors.³ The merchant bourgeoisie of the Hijāz lived almost like the feuding families of an Italian Renaissance city, in houses that were veritable arsenals. These clan or tribal stores of arms and armour ensured the merchants' domination of those vital trade routes that lay across bedouin-controlled territory. Such stores were also constantly replenished or increased by tribute from subordinate families or tribes, and by a steady importation of arms.⁴ Not all weaponry need

2. Schwarzlose, op. cit., passim; El Gindi, op. cit., passim; Al Jarbū^c, op. cit., passim.

3. Lombard, Les métaux, pp. 253-255.

4. Ibid., p. 153.

have been imported from a distance, of course. Apart from local arms made from local ores, non-metallic equipment such as felt armour recorded in use at the time of the Prophet,⁵ and shields of various leathers mentioned by early Arab poets, were probably produced in or near the Arabian peninsula.

Although early Arab poetry cannot be regarded as a literal guide to the military situation in 6th and 7th century Arabia, it does seem to support the thesis that arms and armour were abundant in the area. One poet, for example, considered it worth noting that he fought without armour during a particular battle.⁶ In such cases a warrior would still presumably have used a shield, perhaps of camel-hide, particularly if he was on foot and *engaged*, in sword-play.⁷ Similar verses also suggest that armour, such as the basic dir^c hauberk, was often worn without helmets,⁸ but that the latter might have been more common among cavalry than among infantry.⁹ Of course, horsemen were an élite in Arabia, as they were in most warrior societies, and the confused *melee* of cavalry warfare made a cavalryman more vulnerable to an unexpected blow from an unseen quarter than was a foot-soldier fighting in the ranks.

Statistics based upon poetry must be treated with even greater caution than the verses themselves, but some interesting results have been produced by ^cAlī Muḥammad ^cAlī al Gindi, and these again suggest that armour was far from rare in early 7th century Arabia. In the

5. Al Ṭabarī, op. cit., vol. I, p. 1541.

6. Al Jarbū^c, op. cit., pp. 219-220.

7. El Gindi, op. cit., p. 170.

8. Al Jarbū^c, op. cit., p. 227.

9. El Gindi, op. cit., p. 97.

available poetry he noted one hundred and seventeen mentions of swords compared with ninety-two of spears and only thirty-four mentions of the bow. The numbers relating to armour are even more surprising. No less than seventy references were made to hauberks, but only seven to helmets and three to shields.¹⁰ Surely, this must at least indicate that sword and spear dominated the battle-field and that the hauberk was, in its various forms, quite common.

While it could be argued that the Arabs were richer in arms and armour per head of population than were their more settled neighbours, few would dispute that the Arabian peninsula was acutely short of horses. This is not to say that cavalry was unknown. Even in southern Arabia, where the domesticated horse had probably only been known for a few centuries, some leading warriors owned their own mounts as early as the 6th century.¹¹ Some decades later, when Najrān fell to the Muslims, horses were plentiful enough to be demanded as tribute in similar numbers to camels and armours.¹² Horses were also demanded as tribute from other areas including, perhaps surprisingly, the primarily desert region of Yamāmah along the Gulf coast.¹³ When the Muslim conquests spread beyond the Arabian peninsula towards the Fertile Crescent, tribute and booty of horses naturally became more abundant,¹⁴ but it would be a long time before cavalry could play anything but a subordinate role in these first Muslim armies.

The Muslims, while still limited to the Hījāz, apparently fought

10. Ibid., p. 149A.

11. Al Asali, op. cit., pp. 204-205.

12. Al Balādhurī, op. cit., p. 98.

13. Ibid., p. 137.

14. Ibid., p. 93.

in close ranks for moral support. By this means, apparently, Muhammad's outnumbered but deeply committed warriors were able to defeat their pagan foes. Such disciplined infantry formations, which could accept higher casualties, were normal in the professional armies of Byzantium and Iran but were, according to Moraes Farias, unlike the normal Arab practice of the time.¹⁵

Javelins were used at the start of a battle, before the opposing forces came into contact.¹⁶ Yet they seem not to have been highly regarded as weapons, for they are only rarely mentioned in early Arab verses.¹⁷ Byzantium had already updated earlier Graeco-Roman infantry formations to meet the needs of late 6th century warfare. They now placed their scutati, shield-bearing infantry with spears up to four metres long, in four close ranks, those with the heaviest armour standing in front or on the flanks. By this means the spears of all four ranks could present a deadly hedge against an approaching foe. Behind these scutati stood the psili javelin-men who hurled their weapons over the heads of the scutati. Archers may also have been stationed here, although they are more likely to have been on the flanks.¹⁸ Such tactics were almost certainly the inspiration for Muhammad's military ideas. The Byzantines had already reduced the amount of armour worn by their infantry, relying instead on larger shields. In part this may have been a move towards greater mobility,¹⁹ but ^{it} _^ was just as likely to reflect a poverty of metal resources. It

15. Moraes Farias, op. cit., p. 812.

16. Al Jarbū^c, op. cit., p. 229.

17. Ibid.

18. Lombard, Les métaux, p. 247; Haldon, 'Some Aspects of Byzantine Military Organization, pp. 20 and 23.

19. Lombard, Les Métaux, p. 148.



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may even have led to Byzantine infantry being less well armoured than their first Muslim foes.

The subordination of the bow to the javelin in these 6th and early 7th century Byzantine sources is an almost exact antithesis of the situation in mid-7th century Arabia, where the "Saraceni" had, of course, long been characterized as archers. According to the earliest surviving biography of the Prophet, written by Ibn Is'hāq (d. 768 AD), the role of archers in the Ḥijāz was skirmishing before two armies closed,²⁰ and then protecting the flanks of an infantry formation from the enemy's cavalry.²¹ Again the tactical concept is identical to that evolved in Byzantium.

Doubtful as the dating of most religious relics must be, one bamboo bow, said to have belonged to the Prophet and now in the Topkapu Reliquary (Fig. 105), is of a very simple type that may well have been used in the Ḥijāz before the widespread adoption of the composite bow.

The role of cavalry in Muhammad's first armies could not, of course, mirror that in the existing Middle Eastern empires. Throughout the period covered by this chapter, Muslim cavalry did not use stirrups. In all probability this device was not even known in Arabia and the first provinces overrun by Islam. On the other hand there is a possibility, as indicated by al Jāḥiẓ, that the first Muslim horsemen did know of the stirrup but, for many years, made a conscious decision not to use it.²² This suggestion will be discussed in greater detail in a later chapter. Since pagan Mecca was richer in horses than Muslim

20. Ibn Is'hāq, The Life of Muhammad, Apostle of Allah, E. Rehatsek trans., (London 1964), p. 94.

21. Ibid., p. 107.

22. Al Jāḥiẓ, Al Bayān wa'l Tabyīn, pp. 19-20.

Madīnah, cavalry first appeared fighting against Islam rather than for it. Nevertheless, so valuable were war-horses in these and subsequent decades that they were generally led to battle from a camel or a mule and only mounted for the combat itself.²³ On the other hand, other sources indicate that cavalry might have led an army into battle or across hostile territory,²⁴ though not being expected to engage an enemy if the latter were prepared and waiting. Rather the horsemen would hover on the flanks of the opposing infantry, ready to take advantage of any loss of cohesion among the enemy.²⁴ If the foe admitted defeat, their infantry would then seek to break off contact, and in any era this is a dangerous military situation. In 7th century Arabia cavalry would then be expected to attack, particularly if the retiring foe broke or became disorganized.

In such situations the lance was considered the best cavalry weapon.²⁶ Among the bedouin it would probably have come in two styles, the normal weapon of five cubits' length which is shown in almost all Middle Eastern art, and a much longer eleven cubits weapon.²⁷ Although these long spears appear in later medieval art and were used by the bedouin well into the 20th century, illustrations from earlier times are virtually unknown. One example of very uncertain, though possibly 7th century, date comes from Coptic Egypt (Fig. 135). A verse celebrating a cavalry victory at al Ghamr, during the Muslim conquest of Palestine,

23. Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," p. 36.

24. Al Jarbū^c, op. cit., p. 239; Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," p. 39.

25. Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," p. 37.

26. Ibid.

27. El Gindi, op. cit., p. 151.

also indicates that a horseman's lance was generally longer than the weapon used by other warriors.²⁸

In addition to spears, long or short, early Arab cavalry may also have used bows or javelins.²⁹ It may be worth noting that while such multi-weapon archer-lancer cavalry had been developed in Byzantium from the early 6th to early 7th centuries, such troops failed in the 7th and 8th centuries against new foes who, of course, included the Arabs.

The 7th century Byzantines, though not perhaps individually the most effective cavalry of this period, were not, unlike the Arabs, short of horses. Thus they could afford to field offensive cavalry formations and accept the inevitable wastage that sending cavalry against prepared infantry entailed. According to the Strategikon attributed to the Emperor Maurice, such cavalry formations would consist of seven or eight ranks of lancers with lighter and more manoeuvrable horse-archers in looser formations on their flanks. Additional and separate units would also attempt to turn the enemy's flank or prevent him from turning one's own.³⁰

Clearly the Muslims needed many more horses before copying such ambitious cavalry tactics, yet the Prophet Muhammad was obviously aware of the need for cavalry if Islam was ever to go onto the offensive. He ordered the purchase of horses and, where possible, the levying of more animals as tribute.³¹ It has even been suggested that the conquest of Khaybar and the subsequent income from this area, plus booty from

28. Al Balādhurī, op. cit., p. 135.

29. Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," p. 39.

30. Lombard, Les métaux, p. 147.

31. Altheim and Stiehl, "Dhū Nuwās," p. 320.

defeated Jewish tribes in Wādī al Qūra, Taymar and Fadak, enabled Muḥammad to raise and maintain Islam's first cavalry force.³² By this means the Muslims were at last able to counter-attack their enemies.

Once Islam went successfully onto the offensive, new problems naturally arose. These sprang primarily from the need to besiege fortified towns and from an acute shortage of strictly Arab manpower. At first, however, some specifically Arabian tactics enabled the Muslims to bypass these problems with superior strategy based upon the widespread use of the camel. Camel-riding^{and more} mobile Muslim infantry armies out-manoeuvered their foes and thus gave battle at times and places of their own choosing. Usually this entailed forcing the enemy to attack Arab infantry when the latter had dismounted in a good defensive position.³³ A lack of camels in adequate numbers in Iran³⁴ might, indeed, have accounted for the comparative slowness of Islam's conquest of this area compared with its immediate successes in the Fertile Crescent and Egypt. In fact, the Arab conquest of Egypt is still a source of controversy. Was the army of ḤAmr ibn al-ʿĀs primarily a cavalry force,³⁵ or did it consist largely of heavily armoured infantry, known as thaqlāh,³⁶ riding to battle on camels?³⁷ All scholars agree, however, that cavalry played some role in this brilliant campaign.

It was also during the Arab conquest of Egypt that the Muslims

32. Ibid., pp. 368-369.

33. Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," p. 37.

34. Ibid., p. 33.

35. Ibid.

36. A. Grohmann, From the World of Arabic Papyri, (Cairo 1952), p. 114.

37. Canard, "L'Expansion Arabe," (during questions after his paper), pp. 316-317.

suffered some of their heaviest casualties from artillery, in this case defending Byzantine Alexandria.³⁸ While the early Muslims were undeniably inferior to most of their foes in terms of siege engines and engineering, they were not entirely ignorant of the art. During the siege of Jā'if, Muḥammad's men used both a dabbābah or mantlet of cowhide and the manjanīn or mangonel. The former might have acted as a protection for those Yemenis operating the latter.³⁹ Several tribal castles in the Ḥijāz were apparently equipped with mangonels,⁴⁰ and their use might have been learned from the Sassanians in Yemen.⁴¹ This engine was perhaps ultimately of Chinese origin and was widely used in Byzantium where it was known as the maggonon or manganikon.⁴² While it may have been known in north Arabian, and strongly Iranian-influenced, Ḥīra in the 3rd century, it was certainly being used by the Muslims at the time of the Caliph ʿUmar I.⁴³

The true counter-weight trebuchet, which was probably invented in the Middle East, did not appear until the 12th century⁴⁴ when, *confusingly*, it was also known as the manjanīn. What the Arabs, in Yemen or Ḥīra, had learned from central Asia via Iran, and which the Byzantines had probably learned via the Avars,⁴⁵ was a more

38. Butler, op. cit., p. 293.

39. Al Balādhurī, op. cit., p. 74; Fries, op. cit., pp. 35-56.

40. Altheim and Stiehl, "Dhū Nuwās," pp. 366-367.

41. Fries, op. cit., p. 56.

42. Schwarzlose, op. cit., p. 321; Bosworth, "Armies of the Prophet," p. 202.

43. Partington, op. cit., p. 189; Bosworth, "Armies of the Prophet," loc. cit.

44. D. R. Hill, "Mechanical Technology," in The Genius of Arab Civilization, J. R. Hayes edit., (Oxford 1976), pp. 175-187.

45. Howard-Johnson, op. cit., p. 303.

primitive mangonel operated, not by a released counter-weight, but by the combined pulling strength of a team of men.⁴⁶ Various forms of such man-powered manāḥīq were later described in detail by al Tarsūṣī in the 12th century.⁴⁷ Primitive as such engines might sound, they were clearly seen as an improvement over the existing torsion engines of the Roman world,⁴⁸ and were to become popular throughout the Mediterranean area and eastern Islam.

Earlier torsion engines were still known and continued to be used in Islam for many centuries after they had been abandoned in Europe. The ḥarrādah (orig. Aramaic "wild ass") was, for example, the same as the Byzantine onagros.⁴⁹ This ballista shot a small rock accurately and fast along a low trajectory and had great range.⁵⁰ The mangonel, by contrast, had limited range, hurled a larger missile high and relied on the rock's own plunging weight to do the damage. As such the mangonel was a fortification destroyer while the ballista could be, and indeed was, used in open battle. The ḥarrādah may not, however, have been known in Arabia, for one of its earliest mentions was during the Byzantine defence of Rās al Ḥa'īn when the weapon proved very effective against the Arab besiegers.⁵¹

While Islam, with its urban bourgeois' élite, could rapidly assimilate the weapons and technology of its ^{equally urbanized} foes, the problem of

46. Hill, "Mechanical Technology," loc. cit.

47. Al Tarsūṣī, op. cit., p. 120.

48. L. White, Jr., "The Crusades and the Technological Thrust of the West," in War, Technology and Society in the Middle East, V. J. Parry and M. E. Yapp edits., (London 1975), pp. 101-102.

49. Bosworth, "Armies of the Prophet," p. 207.

50. Fries, op. cit., p. 57.

51. Al Balādhurī, op. cit., pp. 242-243.

inadequate manpower was not so easily solved. The situation was apparently getting serious by the reign of the Caliph ^CUmar (634-644 AD), at which time the recruitment of Islam's defeated foes, particularly of Persians, was being encouraged.⁵² The militarization of the mawālī, or newly converted "freedmen," was also given official blessing.⁵³ At first these latter new Muslims had entered the ranks as servants or batmen,⁵⁴ but some were clearly playing a vital military role by Umayyad times.⁵⁵ Judging from the evidence of the later 7th and subsequent centuries, these fully-fledged mawālī troops mostly fought as heavily armoured infantry,⁵⁶ although they are also mentioned as horsemen fighting with short spears and javelins.⁵⁷

Now was also the time when the jund or regional armies were organized.⁵⁸ This was, perhaps, not merely a means of garrisoning a vast new empire, but also an attempt to make the most effective use of limited manpower resources. Like so many other aspects of early Islamic military organization, the regional jund armies could have been inspired by Byzantium, in this case by Constantinople's attempt to set up regional theme forces in the early 7th century. These Byzantine reforms may themselves have been inspired by Sassanian

52. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," pp. 44-45.

53. Ibid.; Bosworth, "Armies of the Prophet," p. 203.

54. Crone, op. cit., p. 93.

55. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," loc. cit.; Crone, op. cit., pp. 27 and 92-93.

56. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," p. 50; al Ṭabarī, op. cit., vol. II, p. 464.

57. Al Jāhiz, Al Bayān wa'l Tabyīn, p. 22.

58. Montgomery Watt, The Majesty that was Islam, p. 50; Bosworth, "Armies of the Prophet," p. 203.

military organization, and it is equally possible that the Arabs copied the concept directly from the Persians.⁵⁹ Although the themes were not completed before the eruption of Islam,⁶⁰ the first region to be so organized was Anatolia. Thus the Muslims would soon have become aware of the idea.⁶¹

As the area under Muslim control widened, so an ever-increasing number of horse-raising steppe-lands were acquired. Even in the time of the Rāshidūn Caliphs, cavalry started to play a more important role in the armies of Islam. But however rich the Arabs might have been in arms, their horsemen rarely seem to have been as heavily armoured as their Sassanian and Byzantine heavy-cavalry foes.⁶² If this was indeed a disadvantage, which is far from clear in the written sources, it seems to have been more than compensated for by the Muslims' possession of the finest cavalry mount available. This was the Syrian-Arab breed. It was a cross between the small but strong North African Barb and the heavier Iranian horse. Originating in northern Syria, it was both swift and light, combining the advantages of its two forebears.⁶³

Arab cavalry-versus-cavalry tactics do not, at this time, seem to have differed from those that had been, and would remain for many centuries, traditional throughout the Middle East. Spears would first be used against another horsemen, a sword only being drawn

59. Darko, "La Tactique Touranienne, II," p. 136.

60. Haldon, Aspects of Byzantine Military Administration, pp. 97-101.

61. D. T. Rice, The Byzantines, (London 1962), pp. 47-50.

62. Canard, "L'Expansion Arabe," pp. 316-317.

63. Lombard, The Golden Age of Islam, pp. 169-170.

later.⁶⁴ Full equipment for an Arab horseman just before the Umayyad revolution is unlikely to have changed during the rest of the 7th century. When going on a raid, probably as part of a small entirely mounted force, this was listed by al Balādhurī as turs shield, dir^C hauberk and baydah helmet, plus a packing needle, five smaller needles, linen thread, an awl, scissors, a nose-bag and a basket.⁶⁵

It was probably such heavy cavalry that was described by an Arab poet as "loaded down with coats of mail" while raiding Nubia in 652 AD.⁶⁶ Unfortunately, available illustrations of possible early Muslim cavalry from Egypt (Figs. 135 and 136) do not show any obvious armour other than the helmet. One of these sources does, however, show a long-hafted mace (Fig. 136) of a type that was to become widespread among Umayyad cavalry. This camūd^C appears as the only weapon on a silver dish, probably from 7th century Palestine or Syria, that was discovered in central Russia (Fig. 115). One of the figures on this dish may wear a scale hauberk of a type that might have been the basic dir^C of the 7th and 8th centuries. Although the camūd^C is noted in early sources, it seems to have been a bedouin weapon and is rarely mentioned in use by regular Muslim troops until the Caliphate of ^CAlī (see Part Two, Chapter Two).

Elsewhere horse-riding ansār warriors who took part in the Day of the Camel battle in 656 AD were described as armed with swords on baldrics, and "bristling" in iron armour.⁶⁷ These men might, of course, have been mounted infantry. Other troops were, on the same

64. Al Balādhurī, op. cit., p. 129.

65. Ibid., p. 445.

66. Shinnie, op. cit., p. 4.

67. Al Mas'ūdī, op. cit., vol. IV, p. 309.

occasion, specified as cavalry. They were armed with rumh lances while some also had iron armour. Whereas in Byzantium such heavy cavalry were trained to fight as once-only shock-troops,⁶⁸ Arab armoured horsemen could fight just as effectively on foot. This they would do if, for example, surrounded and outnumbered.⁶⁹ Arab horsemen could also fight as infantry in ranks, abandoning their armour for greater freedom of movement if required.⁷⁰ At the battle of Siffin in 657 AD, heavily armoured horsemen were also recorded as dismounting to fight a duel between the opposing armies, though this time they retained their armour. The champion from ^CAlī's side wore a dir^C hauberk tightened by a mahzam belt, a mighfar coif that apparently covered all his face except his eyes, and was armed with a sword. The champion from Mu^Cawiyah's army also wielded a sword and wore a dir^C of scale armour.⁷¹

Such incidents clearly show that infantry still dominated the battlefield. Such a situation might lie behind one of medieval Islam's favorite military hadīths, in which the Prophet reportedly said, "Use ye the spear and the Arab bow, for with them was your Prophet victorious, and with their might ye have conquered the earth."⁷² While the statement is unlikely to have been genuine, it may well have originated in the time of the Rāshidūn Caliphs when Islam did indeed seem to be conquering the earth. The bow was, in the Arab armies of the time, primarily an infantry weapon, while the spear

68. Darko, "La Tactique Touranienne, II," pp. 130-131.

69. Hill, The Mobility of the Arab Armies in the Early Conquests, p. 188.

70. Al Mas^Cūdī, op. cit., vol.V, p. 55.

71. Ibid., vol.V, pp. 49-50.

72. N. A. Faris and R. P. Elmer, Arab Archery, (Princeton 1945), p. 8.

was used by all troops.

Considering the reverence with which the supposed swords of the Prophet and the Rāshidūn Caliphs were preserved by later generations of Muslims, it seems surprising that more emphasis was not given to swords in pious hadīths. Genuinely attributed or otherwise, those blades now preserved in the Topkapu Reliquary are certainly very early indeed (Figs. 106-114).⁷³

Abundant as armour might have been among early Muslim cavalry, it was clearly not universal. Nor was it worn by all infantry. In fact, the Arabs' situation was much like that of their Byzantine foes. Both sides found it necessary to put armoured infantry in the front ranks to defend those not so protected who stood to the rear. This was the case in the battle of Siffin.⁷⁴ If such front-ranking troops wore normal long-sleeved hauberks like that perhaps illustrated in Fig. 462, and carried shields, then an analysis of the most commonly inflicted wounds, drawn up by D. R. Hill, would be quite understandable. Most frequent hurts were suffered to legs and feet, the least common to shoulders, hands and bodies. Arrow wounds to the face were also common.⁷⁵ With the exception of the latter, such wounds are similar to those found on most of the victims of the battle of Wisby. In this singularly grim 14th century Scandinavian encounter, the losing side once again largely consisted of armoured infantry fighting in ranks.⁷⁶

73. A. R. Zaki, Al Sayf fī'l 'Ālim al Islāmī, (Cairo 1957), passim.

74. R. Levy, The Social Structure of Islam, (Cambridge 1957), p. 432.

75. Hill, The Mobility of the Arab Armies in the Early Conquests, p. 143.

76. Thordeman, Armour from the Battle of Wisby, 1361, vol. I, pp. 149-209.

CHAPTER 3

THE MILITARY CONTRIBUTION OF CONQUERED AND NEIGHBOURING PEOPLES

Throughout the history of Arab expansion, and indeed beyond, many non-Arab peoples contributed to the military strength of Islam. This naturally meant that differing traditions of military organization and equipment were drawn into the Muslim orbit, each contributing to a greater or lesser degree towards the evolution of Muslim military technology.

Syria

Among the first to be incorporated in this way were the Syrians, that is those inhabitants of the Fertile Crescent who had lived under Byzantine rule before the coming of Islam.

Although non-Arab Syrians were never to play a major role in Islamic military history, they, like their Egyptian counterparts, were not entirely passive during the Umayyad period. Not only did local warriors such as the Mardaïtes or Jarajimah, who were possibly descendants of the Byzantine Limitanei, resist Muslim domination for some decades, but many of their number later enlisted under the Caliph ^CAbd al Malik to fight against their erstwhile masters and allies.¹ Other Syrians became mawālī, at first apparently as non-combatants but later as soldiers. In 716/7 AD Yazīd ibn Muhallab recruited Syrians, some of whom may have been locals rather than Arab settlers, for the conquest of Jurjān and Ṭabaristān, while indigenous

1. H. Ahrweiler, "L'Asie Mineure et les invasions Arabes," Revue Historique, CCXXVII (1962), pp. 5-6; E. W. Brooks, "The Arabs in Asia Minor, from Arabic Sources," Journal of Hellenic Studies, XVIII (1898), p. 203; Howard-Johnson, op. cit., pp. 25-26.

Syrians were almost certainly involved in early Muslim raids into Armenia and Anatolia.²

It would, in fact, probably be true to say that not only were the Arabs greatly influenced by Romano-Byzantine Syria in the pre-Islamic period, but that these influences made the absorption by the first Muslims of the existing military structure and traditions of Syria very much easier.

Egypt and Nubia

The military role of true Egyptians, that is Copts, was minimal under both Byzantine and Umayyad rule, but some of their southern neighbours were more active.

During the 5th century the last, and from the point of view of Islamic history the most important, of the peoples south of Egypt arrived on the scene. They were the Nubians who were probably called in by the Romans, from their original home in the oases west of the Nile, to crush the troublesome Blemya. Their conquest of present-day Nubia was completed by 530 AD.³ Like their Blemya foes, the Nubians were accomplished archers, though we cannot tell whether they used the thumb or finger draw. Certainly, the first Muslim army to penetrate south of Aswān returned with tales of exceptionally accurate Nubian bowmen who "put out the eyes" of the armoured Arabs.⁴ They shot with wooden nebl, rather than lighter reed, arrows, and at least in later centuries were described as having "curiously shaped" bows⁵

2. R. Levy, An Introduction to the Sociology of Islam, II, (London 1933), pp. 271-272.

3. P. L. Shinnie, Medieval Nubia, (Khartoum 1954), p. 2.

4. Al Balādhurī, op. cit., p. 331.

5. Al Mas'ūdī, op. cit., vol. II, pp. 382-383.

and bowstrings that were probably woven from grass.⁶

Christians Nubians might have formed the élite corps of black troops who served the Governor of Alexandria during the last Byzantine civil war in Egypt, although they could, of course, also have been Christian Ethiopians or pagan Eritreans. The latter probably formed the bulk of black troops serving the pagan Quraysh in the Hijāz. Subsequently others fought for the Umayyads both in Mecca and Madīnah,⁷ while a thousand such black troops reportedly marched with ^CAmr ibn al ^CĀḡ during the Muslim conquest of Egypt.⁸ Presumably such Umayyad warriors would have already accepted Islam.

The bulk of local Coptic levies would appear to have been infantry. Many such are mentioned during the Muslim conquest. Egyptian infantry in Fayyūm and Mīar were led by a certain John,⁹ while a local militia in Alexandria had at its head an officer named Constantine.¹⁰ A semi-legendary source in Mas^Cūdī also has Copts in a mixed Byzantine army defending Tinnīs.¹¹ Native forces may or may not have formed part of the bucellarii who garrisoned Egypt,¹² but they certainly continued well into the early Muslim period. Under local pagarchs and nomarques they were responsible for internal security and law

6. Faris and Elmer, op. cit., p. 94.

7. Lammens, op. cit., pp. 441-442 and 442 n. 1 and 2.

8. Butler, op. cit., p. 257.

9. Ibid., pp. 182 and 222-224.

10. Ibid., p. 330.

11. Ibid., p. 353.

12. H. I. Bell, "The Administration of Egypt under the Umayyad Khalifs," Byzantinische Zeitschrift, XXVIII (1928), pp. 278-280; H. Lammens, "Un Gouverneur Omayyade d'Egypte - Qurra ibn Šarīk - d'après les papyrus Arabes," in Études sur le Siècle des Omayyades, (Beirut 1930), pp. 319-320.

enforcement.¹³ The Coptic population also helped the Muslims beat off various Byzantine counter-attacks although, of course, the main Egyptian contribution during the Umayyad era was in the manning of the fleet.¹⁴

Meanwhile, Coptic visual sources show the troops of Egypt to be basically Byzantine in their equipment, though with minor local variations. The Iranian sword-belt does not, for example, appear. On the other hand the originally Iranian scabbard-slide, long hilt and fundamentally Central Asian angled pommel do. One possible local variation may be the wearing of the scabbard across the back (Fig. 14). This seems to reappear in 9th and 10th century Coptic manuscripts (Figs. 143 and 145). As elsewhere in the Middle East, the long, round-ended sword-blade grew in popularity towards the end of the pre-Islamic period (Figs. 18, 137 and 141) and, given the uncertain dating of much Coptic art, may in fact have resulted from the Muslim conquest. Such uncertain dating is a particular problem in Egypt.

The Maghrib

Information, both written and pictorial, concerning the last pre-Islamic centuries in the Maghrib is sparse in the extreme, though we are better served for the earlier period. While it is dangerous to assume too much continuity in military traditions, one has little alternative in this case.

More is known about early Berber cavalry than infantry and their most obvious feature was a tradition of riding bare-back. These warriors were clearly drawn from the nomadic or semi-nomadic section of the population and normally fought as light cavalry, harassing

13. Ibid.

14. M. A. Shaban, Islamic History, AD 600-750, A New Interpretation, (Cambridge 1971), p. 123.

and surrounding, but rarely closing with, their foes.¹⁵ In this the Berbers followed a tradition of warfare similar to that of the bedouin Arabs, with a comparable concern to avoid unnecessary casualties.¹⁶ Another similarity between the nomadic Berbers and nomadic Arabs that persisted well into the Islamic era was their use of pack animals to create a "fortified" encampment as a base from which to operate essentially karr wa farr tactics.¹⁷

A characteristic Berber weapon was the javelin, and this appears to have been true of both infantry and cavalry. These weapons had iron heads and iron butts or feet.¹⁸ The cavalry also carried medium-sized round leather shields.¹⁹ The javelin, in fact, continued to be the Berbers' chief weapon long after the Muslim conquest.²⁰

As already mentioned, nomadic Berber tribes of the late pre-Islamic and early Islamic periods used pack-animals to form a sort of defended encampment in open country. Camels proved to be the most suitable beasts in such a situation, yet the widespread raising of camels in the western Maghrib only dates from a westward migration

15. J. Burien, "Die einheimische Bevölkerung Nordafrikas in der Spätantike bis zur Einwanderung der Wandalen," in Die Araber in der Alten Welt, V/1, F. Altheim and R. Stiehl edits., (Berlin 1968), pp. 216 and 248.

16. P. F. de Moraes Farias, "The Almoravids: Some Questions concerning the Character of the Movement during its period of Closest Contact with the Western Sudan," Bulletin de l'Institut Fondamental d'Afrique Noir, ser.B, XXIX (1967), p. 810.

17. P. Connolly, Hannibal and the Enemies of Rome, (London 1978), p. 41; Altheim and Stiel, "Der Untergang Meroë's Chinahandel," pp. 301-303; Buttin, "Les Adargues de Fès," p. 410.

18. Moraes Farias, op. cit., p. 811.

19. Connolly, loc. cit.

20. Beshir, op. cit., pp. 67-70; Moraes Farias, op. cit., pp. 810-811.

of Lawata tribes in the 6th century.²¹ It was, in fact, their pressure that largely obliterated Byzantine civilization in the Tunisian plain a century before the arrival of the Muslims.²²

Armenia and Byzantium

Another area to have a noticeable influence on Muslim military technology was Armenia. In the pre-Islamic period Armenians served as mercenaries and local levies in the armies of both Sassanian Iran and Byzantium. In the former they were highly regarded as cavalry,²³ while in the latter Armenians played an increasingly important role during the reigns of Maurice and Heraclius.²⁴ They were, in fact, particularly prominent during the defence of the eastern provinces against the first Muslim onslaught.²⁵

Whereas the imperial art of Constantinople generally illustrates elite guard units in a somewhat archaic fashion, early Armenian art might prove more reliable for the fighting cavalry of the frontier region (Fig. 239). The riders on the carving at Mren appear to wear long-sleeved scale hauberks, probably similar to the lorikions and zabas of Byzantine written sources. Note also the Iranian-style padded or quilted sleeves. Scale armour, being essentially less flexible than mail or lamellar, is rarely illustrated with long sleeves. The two princes on the Cathedral of Mren, however, wear hauberks in which this problem is apparently solved by leaving parts of the

21. W. H. C. Frend, "North Africa and Europe in the Early Middle Ages," Transactions of the Royal Historical Society, 5th. ser. V (1955), pp. 64-65.

22. Ibid.

23. Christensen, op. cit., pp. 201-203; Lombard, Les Métaux, p. 34.

24. Haldon, Aspects of Byzantine Military Administration, pp. 17 and 19.

25. Shaban, op. cit., p. 26.

elbow area unscaled. Such long scale hauberks, opening down the front as they do, may correspond to the Arab dir^c which, like the non-protective durra^cah, was probably slit down the front.²⁶ A saddle on this Armenian carving is also unique, having a distinctly raised pommel, but a flat unflared cantle. In general such illustrations suggest that Armenia and the Caucasus were, in military technology at least, under greater Iranian, and perhaps southern, influence than Byzantine influence.

Byzantine military administration also had a profound influence on the armies of the Caliphate, a fact upon which almost all sources agree. But Byzantium had far less to offer in the field of military technology. What Byzantine influence there was in this area probably came from Syria, a province which was in many respects different from the rest of the Empire. In fact, Byzantium remained much more an importer of influences than it was an exporter, at least in relation to its eastern neighbours. Indeed, military developments in the East Roman Empire from the late 7th to early 10th centuries suggest that the Muslims, who rapidly evolved their own synthesis of military traditions, had far more to offer than did Byzantium. The Byzantines remained for some centuries adapters of foreign and usually hostile military technologies, a role that they undertook successfully for a thousand years.

Iberia

At the other end of the Mediterranean another military tradition also had its influence upon Islam. While an emphasis on cavalry set the Visigoths apart from most other Germanic barbarians,²⁷ with

26. Al Aqsarā'ī, op. cit., pp. 17 and 321; J. G. Hava, Arabic-English Dictionary, (Beirut 1899).

27. Hoffmeyer, op. cit., pp. 77-78; Sánchez-Albornoz, "La Caballería Visigoda," p. 101.

the exception of the Lombards, infantry cannot be ignored in pre-Islamic Iberia. They are clearly shown on the limited available art (Fig. 81), and their numbers may have been considerable, as Visigothic customary law insisted that all free men had military obligations. This law was extended by King Wamba, in the late 7th century, to include the Romano-Celtic population and one-tenth of the slaves as well.²⁸ Such infantry levies probably included many javelin-throwers, infantry archers and slingers.²⁹ The tradition that all free men fought was essentially German in origin, and it survived the Visigothic collapse to persist both in Muslim al Andalus and, more notably, in the sub-Visigothic^{ic} Christian states of the north.³⁰

The fact that the Visigoths were obliged to call up their non-Visigothic subjects, and even slaves, probably accounts for the widespread impression that the army defeated by Ṭāriq ibn Ziyād at Rio Barbate in 711 AD consisted of unwilling and demoralized serfs. King Wamba may have recruited unreliable elements, but his military units reforms also referred to various élite/of obvious Byzantine inspiration.³¹ These troops were not defined as being either cavalry or infantry, and indeed there seems to be no specific reference to cavalry during the reigns of Wamba and Ervigild. Yet this need not mean that such troops disappeared.³² Indeed, Arab historians of the Muslim conquest

28. Hoffmeyer, op. cit., pp. 75-76.

29. Ibid.

30. L. Lourie, "A Society Organized for War: Medieval Spain," Past and Present, XXXV (1966), p. 60; C. Sánchez-Albornoz, "El Ejército y la Guerra en el Reino Asturleonés, 718-1037," in Ordinamenti Militari in Occidente nell'alto Medioevo, Settimane di Studio del Centro Italiano di Studi sull'alto Medioevo, XV/1 (Spoleto 1960), p. 299.

31. Hoffmeyer, loc. cit.

32. Sánchez-Albornoz, "La Caballería Visigoda," pp. 102-103.

make it clear that they had not. The first Muslim raiders met large cavalry forces, and before the main invasion by T̄ariq, the Muslims insisted that their allies, the Visigoth^{ic} rebels, provide cavalry cover. Similarly, traditional accounts of King Ro^derick's defeat describe the core of his army as mounted, while chronicles of the subsequent Arab conquest of the peninsula indicate that the leading citizens and warriors of many cities fought as cavalry.³³ In fact, the Visigoths seemed to have failed in the battle of Rio Barbate for political reasons, including treachery, and the singularly high morale of their Muslim infantry foes, and not through any lack of cavalry.³⁴

Two well-preserved horse-bits survive from this period (Figs. 492 and 493). One supposedly belonged to King Witiza. It is a straightforward cheek-curb type, though its psalions may have been attached to extra reins, a curb rein or a martingale. The second bit is a far more advanced specimen, if its early 8th century dating is correct. Here the psalions are half-way to becoming part of a true curb-bit, and its mouth-piece certainly has the curb that will later become typical of Middle Eastern horse-furniture.

Visigoth^{ic} military traditions would be strongly, indeed consciously, retained by the Christian successor kingdom of Asturias.³⁵ They would also have a profound impact on Muslim al Andalus whose armies soon contained a strong Spanish element, while warfare between the Asturo-Leonese and the Umayyad Emirate merely reinforced similarities in the

33. ibid., pp. 103-105.

34. C. Sánchez-Albornoz in discussion following M. Canard, "L'Expansion Arabe: le problème militaire," in L'Expansion Arabe-Islamique et ses repercussions, Sattimane di Studio del Centro Italiano di studi sull'alto medioevo, XII (Spoleto 1965), pp. 316-317.

35. Sánchez-Albornoz, "El Ejército y la Guerra en el Reino Asturleonés, 718-1037," p. 301; Beeler, op. cit., p. 158.

role of cavalry, its armament and proto-feudal organization.³⁶

Although Mediterranean Europe had, by the 8th century, evolved military traditions that made it distinct from both the Byzantine east and North Africa, the Germanic successor states of this area were also different from one another. Visigothic Iberia alone, however, would be drawn into the Muslim world. The ease, in military terms at least, with which it evolved into Muslim al Andalus almost certainly reflected the similarities that already existed between Visigothic and early Muslim military traditions, similarities that did not exist in the Frankish kingdom and which could only be found to a limited degree in Lombard Italy.

Iran

Far to the east, the military technology of the Sassanian Empire raises some distinctive problems. The Sassanian army was not very Central Asian in its organization or in its tactics, and only to a small degree in its organization. Sassanian forces seem, in fact, to have fought in a manner not unlike that of the Byzantines, who in all probability learned much from their eastern neighbours. Sassanian horse-archers, many of whom wore mail and also acted as heavy cavalry, would advance in orderly ranks and shoot at command, not individually as did the Turks.³⁷ Their shooting was, however, known more for its rapidity than its power of penetration. This was a feature that survived up to, and perhaps beyond, the Muslim conquest.³⁸ Sassanians also made use of massed infantry charges, though this latter tactic may have been more common in mountainous areas rather than in the

36. Sánchez-Albornoz, "El Ejército y la Guerra en el Reino Asturleonés, 718-1037," pp. 301-304.

37. Aussaresses, op. cit., pp. 5-6.

38. Ibid.

plains where cavalry could have been expected to dominate.

Traditional accounts, which seem to be based on fact, describe the Sassanian battle-order as being led by cavalry, followed by war-elephants, and with infantry bringing up the rear. Horse-archers were supposedly to the left of cavalry formations,³⁹ presumably in an effort to outflank, and thus expose, an enemy's unshielded right side. Such formations were, however, neither particularly original nor solely Iranian. Other organizational features of the Sassanian army were to persist into the Muslim era, and these include such terminology as nund or corps, drafsh or smaller unit and its banner, and possibly also vasht as the smallest unit of all.⁴⁰

As has already been mentioned, the first Sassanian monarchs were not averse to adopting Romano-Byzantine tactics, even in cavalry warfare, although this only appears to have been the case where close-combat horsemen were concerned.⁴¹ Shāpūr II's first one thousand élite heavy cavalry either evolved into or merged with the characteristic asvārān of the later Sassanian army. Such asvārān were regarded as the finest heavy cavalry in the then known world, and their equipment clearly reflected their status. Those technological advances that produced the long-sword also provided them with perhaps their most devastating weapon.⁴² Its long blade, strong, reliable and with a hardened edge that retained its keenness, enabled a far more powerful blow to be struck. Its length also enabled a swordsman on horseback to combat infantry more effectively without leaning too far from his

39. Christensen, op. cit., pp. 201-213.

40. Ibid.

41. Altheim and Stiehl, "Shāpūr und die Araber," p. 349.

42. Auzanov, op. cit., pp. 50-53.

saddle. At a time when stirrups had yet to appear in Iran, this was a distinct advantage. Sassanian metalwork shows a style of sword-play that was very suitable for such a long-bladed weapon when used from horseback. In such sources a finger over one quillon gives the sort of power to a stroke that could be compared with a good golf swing. These Sassanian plates are probably the earliest representations of a style of sword-play that was subsequently to be seen further east in 9th and 10th century Chinese Turkistān, and further west in Azarbayjān and even Spain in the 12th and 13th centuries. Its westward spread was almost certainly a result of its adoption by Muslim swordsmen, and this is reinforced by the fact that in an European context it is generally regarded as a Spanish or Italian style of fencing.⁴³

The illustration of just such a style of sword-play in an early 10th century Carolingian manuscript (Fig. 680) need not contradict this theory, although it might indicate that earlier Muslim or perhaps Magyar influences were at work and that the role of the Banū Marīn in the western Mediterranean in the 13th and 14th centuries merely reinforced an existing trend.

Most surviving illustrative sources date from the early or mid-Sassanian period. The few later sources tend to show a stronger Central Asian influence in military equipment, ^{exampled} for a silver dish from Kulagysh which I believe to be of east Iranian origin if not from Transoxania (Fig. 442). Here the swords are shorter and are "flared" in a fashion suggesting strong Indian influences. The best representation of many items of late-Sassanian equipment is to be found, however, on the mounted warrior carving at Tāq-i-Bustān

43. J. F. Haskins, "Northern Origins of Sassanian Metalwork," Artibus Asiae, XV (1952), p. 258 n. 2; A. B. Hoffmeyer, "Introduction to the History of the European Sword," Gladius, I (1961), pp. 51-52.

(Fig. 330).

In addition to illustrated sources we have two vital descriptions of Sassanian asvārān. The first, by Heliodorus, is a contemporary account though it is unlikely to be first hand. The second is not contemporary, having been written in Arabic several centuries later by al Ṭabarī. Yet there is reason to suppose that its author was drawing on reliable, though now lost, original sources. In his Aethiopica Heliodorus reports that a Sassanian heavy cavalryman wore a helmet covering his face. This probably indicates an aventail. He also had iron or bronze scale or lamellar armour from shoulders to knees, while his legs and feet were protected by chausses. For his horse there was a metal chamfron and a blanket-like bard of iron scales or lamellar for its back and flanks. Metal knemides or estivals to protect the animal's feet are also mentioned.⁴⁴ Such estivals are normally of felt or leather, and rare at that, as iron armour would be as likely to injure as to protect a horse's legs. Perhaps Heliodorus has here misunderstood his sources and is really referring to plate-like horseshoes sometimes worn as a defence against scattered caltrops.

Al Ṭabarī's description of the men mustered by Khusrau Anūshīrvān in the mid-6th century in no way contradicts Heliodorus. Another factor in favour of his reliability is that he nowhere mentions stirrups. Al Ṭabarī does, however, list the equipment of the asvārān, or as he was known in Arabic the asāwirah, as dir^c hauberk worn over a jawshan cuirass which reached to the knees. A mighfar coif sat on his head, while his limbs were protected by sāqayn chausses and sā^cidayn arm defences. His horse would then be protected by a tijfāf

44. Heliodorus, "Aethiopica, IX, 15," in Eadie, op. cit., p. 170.

bard or caparison, while the rider would also carry a rumh lance, sayf sword, turs shield, qurz mace, and tabarzīn battle-axe. As an archer such a warrior should also be equipped with a ja^cbah quiver of thirty arrows worn on his right side, and a kamāndan bowcase with two gaws bows on his left. These latter weapons already had their watar strings, but in case of need the rider also kept two spare strings tied to the rear of his saddle.⁴⁵

Most late Sassanian and very early Muslim Iranian art sources indicate mail to have remained the basic armour of this region. Unfortunately the Ṭāq-i-Bustān rider (fig. 330) has lost his right arm as well as his feet, and I have been unable to check whether his left arm exists beneath his shield. As he is a spear-bearing warrior it would, however, seem likely that his mail hauberk was long-sleeved. In other respects it is comparable with those at Fīrūzābād, though a little longer. Nevertheless, the rest of his equipment shows various more advanced and generally Central Asian (see below p. 305 ff) features. He wears a mail aventail of a type seen at Dura Europos, but which is lacking from the Triumph of Ardashīr I. Short-sleeved mail hauberks do, however, appear on other 7th or 8th century west Iranian sources. One, which might only be to the waist, is worn by a horse-archer (fig. 339). Another is knee-length and is worn, probably, by an infantryman (fig. 335). Such mail hauberks would almost certainly have been known as zirih.⁴⁶

The question of whether or not the scale hauberk continued to

45. Al Tabarī, "Tarīkh al-Rusūl wa'l-Mulūk," M. H. Zotenberg trans., Chronique de Tabarī, II, (Paris 1867), p. 228; Bivar, "Cavalry Equipment and Tactics on the Euphrates Frontier," pp. 275-276 and 291.

46. Bivar, "Cavalry Equipment and Tactics on the Euphrates Frontier," p. 291.

be used in Iran is more difficult. It is generally associated with the Romano-Byzantine and perhaps Arab worlds, rather than with the Iranian. Lamellar is simpler, and the best-known Sassanian specimen is, of course, that carried by the Ṭāq-i-Bustān horse (Fig. 330). After the Parthians, with their strong Central Asian traditions, lamellar seems to have been abandoned in the west Iranian heartland until the very end of the Sassanian era. Of course, these final centuries also saw a pronounced revival of Central Asian fashions in many aspects of Sassanian military technology. The lamellar lawshan (Fig. 442), worn over a mail hauberk, does seem to have remained an east Iranian or Transoxanian fashion until the fall of the Sassanians. Fortunately, we have a fragment of mid-7th century Iranian lamellae which indicates not only the construction, though not the final shape, of such mixed iron and bronze lamellar armour, but also that it was known reasonably far west (Fig. 332).

Helmets and other head protections in Sassanian Iran are well illustrated both in the art and by surviving specimens. Unfortunately, there is a lack of written material to help explain some of the more obscure pictorial sources. Coif and aventail are a case in point. Only in one source, and an immediately post-Sassanian one at that (Fig. 336), does the head-covering appear more likely to have been a coif under a helmet or cap, than an aventail attached to such a helmet. This crude piece of stucco-work was probably once painted. Although this may account for its apparent lack of surface detail, it does not help us to interpret the head-covering in question. Elsewhere an aventail of mail or scale is either strongly suggested in the art (Figs. 48, 500, 51, 53A and 442), or is quite clearly shown as at Ṭāq-i-Bustān (Fig. 330). In no case does it join the hauberk; it invariably lies upon the shoulders of another garment, whether

of armour or not. Surviving helmets simply confirm this Iranian preference for aventails (Figs. 40 and 41).

As far as the helmets themselves are concerned, there is something of a clash between surviving specimens and most of the art. The former are generally tall, of the so-called Parthian Cap shape, whether of the early two-piece construction (Fig. 40) or of the later spangenhelm form (Figs. 55 and 56). All have straight lower edges and a symmetrically curved comb. Some of the art shows a similar outline (Figs. 51, 53A, 53B, 337 and 339), though in most cases an extra neck-guard is attached or some form of decorative covering, rim or plume, has been added. Only at Tāq-i-Bustān (Fig. 330) is a spangenhelm construction clearly shown, and here the helmet is of a low-domed outline in no way reminiscent of the Parthian Cap.

Elsewhere leather caps or hoods are suggested, though their outlines indicate a tall helmet, perhaps of the Parthian Cap shape, worn underneath (Figs. 48, 50B and 50C). In some such cases their lower outlines show the apparent flexibility of these helmet coverings, while in others the laces or headbands by which they are kept in place are equally apparent. In yet other sources a leather construction is argued by their smooth unriveted surface at a time when the large-scale production of helmets beaten from a single sheet of iron would probably have been beyond existing metallurgical capabilities. The probable survival of this style into early Islamic times is suggested by that admittedly far from clearly embossed ewer from Hamadān (Fig. 335).

The lacing or headband that held such leather or fabric helmet-coverings in position is seen on helmets alone, most obviously at Tāq-i-Bustān (Fig. 330), though also elsewhere (Figs. 331 and 337). Already it had acquired a decorative function over and above its

original purpose of tightening a helmet's lining around its wearer's head. As such, the headband or enlarged lacing would subsequently become a very characteristic feature of Islamic arms and armour.

The role of archery in Sassanian Iran is less clear than might have been expected. Both thumb and finger-draws are illustrated, although it has been argued that the finger-draw was regarded as the "Persian" style in 6th century Byzantine military treatises,⁴⁷ as opposed to the "Roman," or more accurately Central Asian, thumb-draw. Nor was the finger-draw limited to western Iran. It also appears on a probably 5th century Sassanian bronze in which other pieces of equipment and costume strongly suggest an east Iranian origin (Fig. 331). The thumb-draw in Iranian art has, in general, both late and eastern associations (Figs. 338, 339 and 442). It could reflect either the growing Central Asian influence in east Sassanian areas, or the impact of the first Arab Muslim conquerors who are believed to have based their archery firmly on the Byzantine model.

Among the tribal levies enlisted from the more warlike peoples of various Sassanian frontier regions were infantry as well as cavalry. Daylamīs from the mountains south of the Caspian Sea were always renowned as infantry warriors, though they would also operate as a highly mobile force of mounted infantry. The men of Sijistān were likely to have included large infantry elements, as would contingents of Albanians and Abkhazians from the Caucasus, Cadusians from Azarbāyjān, and Pāriz from Kirmān. Of these the most famous remained the Daylamīs, who have already been mentioned as a contingent sent to the Yemen. In Sassanian times they apparently fought, as later, with swords, shields, and traditional though still somewhat obscure zhūpīn javelins.⁴⁸

47. Bivar, "Cavalry Equipment and Tactics," pp. 284-285.

48. Bosworth, "Military Organization under the Būyids of Persia and Iraq," p. 147.

Many troops from the Sassanian heartland, from which I exclude the Caucasus and what is now Afghanistan, also fought for the Caliphate immediately after the Muslim conquest. The first such troops to enlist under Muslim colours appear to have been four thousand Daylamīs of the Persian governor of Iraq's own bodyguard who changed their allegiance after the battle of Qādisīya in 635 AD.⁴⁹ Others followed, though there is no confirmation that all these hamra' al daylam, as they were known, adopted Islam.⁵⁰ Other Sassanian troops, known to the first Muslims simply as hamra' or "red" foreigners with presumably paler complexions than the Arabs, were probably lighter cavalry than the heavily armoured asvārān. These latter were known in Arabic as asāwīrah. Their numbers increased rapidly as elements of the defeated Sassanian armies flocked to Kūfa, adopted Islam, were allocated pensions and promptly got caught up in inter-Arab rivalries.⁵¹ Mu^cawiyah later split them up by sending some to Baṣra, others north to the Jazīra or west to Syria, and some even to Egypt.⁵²

Ex-Sassanian asāwīrah are also specifically mentioned as enlisting with the Muslim conquerors.⁵³ They then enjoyed rates of pay superior to those of the Arab Muslims themselves, which must demonstrate their

49. Al Balādhurī, op. cit., vol.I, p. 441.

50. Bosworth, "Military Organization under the Būyids of Persia and Iraq," pp. 146-147; Ayalon, "Preliminary Remarks of the Mamlūk Military Institution in Islam," pp. 44-45.

51. Al Balādhurī, loc. cit.; Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," loc. cit.; Lammens, Études sur le Siècle des Omeyyades, p. 131.

52. Lewis, op. cit., p. 60; Lammens, Études sur le Siècle des Omeyyades, loc. cit.

53. Al Balādhurī, op. cit., vol.I, p. 180 and vol.II, p. 109.

fine equipment, training and reputation.⁵⁴

Many Persians also seem to have become mawālī, or supposed "clients," of the conquering Arab tribes. Their exact status in early Islam is still unclear, but they soon had a military role even if most were originally enlisted as non-combatant servants. One-fifth of the first Muslim army to invade Transoxania was, for example, Iranian, while many Khurāsānīs later took part in the invasions of Jurjān and Jabaristān.⁵⁵

The Semitic peoples of Iraq were similarly involved in some of these earlier conquests. Unlike the Iranians, the Iraqis had a minor military role under Sassanian rule, but they are unlikely to have been completely pacific, for as early as the 680s AD, Ḥajjāj ibn Yūsuf was recruiting the first standing army in Islam from detribalized Arabs and non-tribal townsmen from lower Iraq.⁵⁶ These people re-emerge some decades later during the conquest of Jurjān, and later still as a primitively armed but ferocious mob in Baḡhdād, known as Ḥurāt, fighting in defence of their city.⁵⁷

The Sassanian army, as mentioned earlier, also recruited tribal levies from the more warlike peoples of various frontier regions, particularly after the military reforms of Khusrāu I. The most effective cavalry levies seem to have come from the east, and included Kushans and Chionites from Bactria in present-day northern Afghanistan,

54. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," loc. cit.

55. Levy, op. cit., pp. 271-272; H. A. R. Gibb, The Arab Conquests in Central Asia, (London 1923), pp. 15 and 40-41.

56. Shaban, op. cit., p. 105.

57. D. Ayalon, "The Military Reforms of Caliph al-Fu'taym, the background and consequence," in Congress of Orientalists in New Delhi, (Jerusalem 1963), p. 11.

and even a few Huns.⁵⁸ Many would have been horse-archers, but the Kushans at least seem also to have fought as close-combat heavy cavalry.

Another frontier from which such tribal levies were drawn was the Caucasus. From south of the main range came the Albanians, whose kingdom was the third of that region, after Georgia and Armenia. Not much is known of their military traditions except that were noted for their armour of metal and leather as early as the 1st century BC.⁵⁹ In fact this area, to be known as Daghistan in later Muslim times, was to remain a major arms-producing centre throughout much of the Middle Ages, while its warlike inhabitants were to be described as armoured cavalry in the annals of many nations. Many traditional Iranian military styles, as well as other pre-Islamic cultural characteristics, were to persist in this part of the Caucasus for many centuries.

Sassanian, or at least pre-Islamic, military traditions were similarly to persist in what is now Afghanistan, though for different reasons and not for so long. Equally, these eastern provinces of Tukharistan, Bamiyan, Juzjan and Ghur, under strong Indian and Buddhist influences, had always differed from the western areas of the Sassanian Empire. While the mostly Indian and Chinese written sources dealing with this area have as yet been insufficiently studied, a certain amount of pictorial evidence is already available.

Mail, for example, appears quite distinctly in the limited available sources from 7th century Fundukistan (Fig. 333). This may be of some significance, for this was essentially the same area that, under the name of Ghur, was to be one of the most famous arms-producing centres of the early medieval Muslim world. It was also

58. Christensen, loc. cit.

59. T. T. Rice, Ancient Arts of Central Asia, (New York 1965), p. 253.

an area that, after resisting Muslim conquest for a long time, retained an essentially non-Islamic culture for even longer. In this fresco a thigh-length mail hauberk, probably with short sleeves, is worn beneath a tight tunic. Its wearer, judging from his sword-hanging and the small slit at the front of his mail hauberk, was a horseman.

His weapons are also very interesting, as they foreshadow a number of features to become characteristic, first of the eastern Islamic world, and latterly of much of Islam. He almost certainly carries a mace with a fluted or winged head. Such weapons may already have had regal associations, as they were later to acquire in various European cultures.

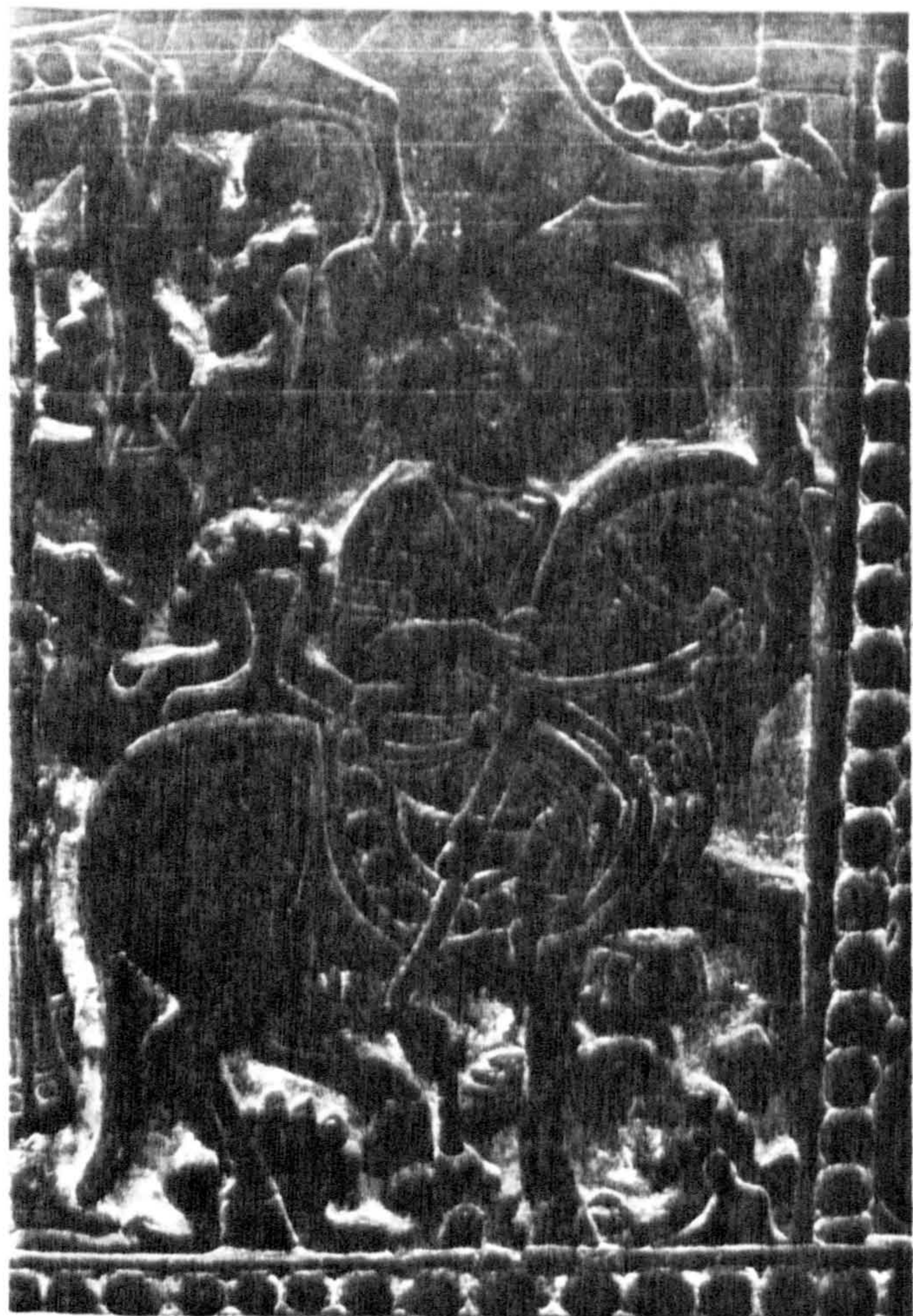
The warriors of what is now Afghanistan were to retain a distinct identity for many centuries after Islam conquered Iran itself. The bulk of the region, after having temporarily fallen to the Arabs in their first rush of conquest, was to see a peak of Buddhist cultural influence in the 8th and 9th centuries, before a steady advance by Islam finally changed both the faith and the culture of this mountainous land.⁶⁰ Despite such a prolonged though temporary setback, Muslim governors of the neighbouring provinces soon recruited large numbers of east Iranian warriors from both sides of this frontier.⁶¹ Many appear to have kept their separate military identity, like those Khurāsānī cavalry with their own particular warcry,⁶² or the several thousand Sijistānīs brought west to Basra by ^cAbd al Raḥmān ibn Samura in the mid-7th century.⁶³

60. Ibid., p. 170.

61. Gibb, op. cit., pp. 40-42.

62. Fries, op. cit., p. 41.

63. Gibb, op. cit., p. 19.



XC VII



XC VIII



XC IX

The Sassanian Empire was the largest single state to fall entirely to Islam during its first conquering centuries. It had also been one of the major military powers of the known world and had in many respects been one of the most advanced in terms of military technology. Small wonder, therefore, that Iran has been regarded as the most important influence on early Islamic arms and armour. While this may, in fact, have been true during the Umayyad era, I believe that it was not so during the early ʿAbbāsid centuries.

Sassanian Iran had itself been under continuing Central Asian military pressure (see below).

Transoxanian military influences seemed to have reached another of their peaks in Iran just before the Sassanians collapsed. Thus it is to Central Asia, and particularly to those provinces of Transoxania that were conquered by the Arabs, that we should look for the most important and persistent influences on the military technology of the classical Islamic world.

Turkistān

Transoxania was certainly to have a profound effect upon many aspects of Muslim civilization. Those various lands beyond the Āmū Daryā, beyond the Sīr Daryā, and over the Pamīr and Tien Shan mountains in Kashgaria, already had much in common culturally. Here the Muslims reached their high-tide of conquest in the north-east, in a province they knew as 'Bā Warā' al Nahr, or "that which is beyond the river". Under the ʿAbbāsids this included Badakhshān amid the head-waters of the Āmū Daryā, Sughd along the lower reaches of the Zarafshān and Kashka Daryā rivers, Ushrusana in the upper Zarafshān valley, Farghānā along the upper Sīr Daryā, Isbījāb or Shāsh just north of the loop of the Sīr Daryā, and, somewhat on its own both geographically and administratively, Khwārazm around the Āmū Daryā delta south of the Aral Sea.

Not only was this area, like most of Turkistān, culturally fragmented in the early Middle Ages, but it had also been politically fragmented since the collapse of Kushan rule.⁶⁴ A tradition of political independence continued, in many ways, after the Islamic conquest, for the Muslim governors of Khurāsān, under whose jurisdiction this area fell, generally permitted the existing local leadership to rule Ma Warā' al Nahr in the 8th and 9th centuries.⁶⁵ Such a situation reflected, and presumably reinforced, the cultural diversity of an area that was already divided between east Iranians, Iranianized Turks and more specifically "Turkish" Turks.

While little is known of the history of Turkistān immediately before the Muslim conquest, even less written material survives to illuminate the military technology of this vital area. Fortunately, however, we have excellent pictorial evidence. This situation is even more fortunate because the bulk of such evidence comes from areas that were dominated by a Turkish élite, rather than those that were strictly Iranian and thus presumably similar to other east Iranian regions that fell, unlike Transoxania, under Sassanian rule.

Those essentially Iranian areas cannot, of course, be ignored. In the north-west was Khwarazm, whose warriors were assisting the Muslim conquest of Transoxania as early as 712/3 AD, having themselves submitted to Qutayba ibn Muslim less than a year earlier. One silver cup from Khwarazm (Fig. 64) suggests that their military equipment was similar to that of Sughd, with the new box-type quiver slung from a belt, and what appear to be the pсалions of a cheek-curb snaffle-bit. Unfortunately this rider has no armour, but he does wear a Sughdian tunic with broad revers, while his horse lacks the equally

64. E. Knobloch, Beyond the Oxus, (London 1972), pp. 23-24.

65. Ibid., pp. 26-27.

typically Turkish tassel beneath its throat-lash. Incidentally, the warriors of Khwarazm do not appear to have adopted Islam at once, for they were reportedly enslaved as mamlūk soldiers at least until the early ^CAbbāsīd period.⁶⁶

More is known about the province of Sughd and of its chief city, Bukharā. Here a pre-eminence of Iranian habits and fashions dated from the area's incorporation into the Achaemenid Empire a thousand years earlier. It was from Sughd that ^CUbaydullāh ibn Ziyād took two thousand prisoners of war as his personal guard after his defeat of Bukharā in 674 AD.⁶⁷ Al Ṭabarī states that these men were highly regarded as archers, but he does not make it clear whether they fought on horseback or on foot.⁶⁸ As city dwellers they probably did the latter, though in an area under persistent Turkish Central Asian influence they probably fought as horse-archers as well.

After the Muslim conquest, an increasing amount of information on Sughdian military traditions becomes available. This area was regarded by the Arabs as rich in weaponry, and one must remember that by the time Baykand and its famous arsenal were captured during the first Muslim expedition across the Āmū Daryā, Islam already had the military resources of Sassanian Iran at its disposal. The superlative quality of arms and armours from Baykand traditionally led the Arabs to coin a phrase, "the forging of Sughd," to describe excellent

66. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," pp. 51-52.

67. Gibb, *op. cit.*, p. 19; P. Crone, The Mawālī in the Umayyad Period, (Unpub. Ph.D. thesis, Univ. of London 1975), pp. 25-26.

68. Al Ṭabarī, Tarīkh al-Jusūl wa'l-Mulūk, II, 1. 3. de Goeje edit., (Leiden 1879-1901), pp. 443 and 464; Fries, *op. cit.*, p. 44.

weaponry.⁶⁹ This was probably a poetic exaggeration, but whatever the truth, the comparative abundance of Sughdian ^{military equipment} is undisputed.

Other sources indicate that the appearance of the dihqāns, or military aristocracy of Sughd, betrayed a variety of cultural influences. During the first Muslim attack on Bukhārā, the presumably infantry guards of the Khātūn or queen appear, somewhat surprisingly, to have carried their swords "from the shoulder" on baldrics.⁷⁰ A century later other warlike dihqāns wore daggers at their belts, as in the available illustrations.⁷¹ The fact that, early in the 8th century, representatives from Bukhārā requested armour and weapons from China probably reflected the troubled state of the area rather than a basic poverty of resources.⁷² The embassy in question was probably representing yet another rising against the Muslim authorities. In 706 AD, however, even the Muslims themselves, when bottled up in Bukhārā by just such a rising, found themselves desperately short of weapons. These changed hands at inflated prices, fifty dirhams for a spear, fifty or sixty for a shield, and no less than seven hundred dirhams for a coat of mail.⁷³

Such evidence seems to indicate that Sughd's wealth in weaponry reflected its wealth in economic rather than productive terms. Cost arms and armour may have been imported, probably from neighbouring Farghānā, which was a major arms manufacturing centre throughout this era.

69. Hamāsa I, 349, Freytag edit., in Gibb, op. cit., pp. 33-34.

70. Narshakhī, The History of Bukhara, R. N. Frye trans., (Cambridge Mass. 1954), p. 9.

71. Ibid., p. 61.

72. Mahler, op. cit., p. 71.

73. Narshakhī, op. cit., p. 46.

Further up the Zarafshān valley lay an area known as Ushrusana. It appears to have been Iranian in population, though ruled by a very Iranianized Turkish élite descended from the Hephthalite Puns. Piandjikent, its capital, was founded in the 5th or 6th century and reached a peak of prosperity in the 7th. Following the Muslim conquest, this city declined as Samarkand and Bukhārā prospered.⁷⁴

The frescoes of Piandjikent give an unparalleled view of Ushrusana's military élite, although warriors of an entirely different appearance appear in a number of clay figurines from the nearby Afrāsiāb area. Most of these latter are on horseback, carry maces and wear, apparently, turbans or head-cloths (Fig. 441). These figurines are, however, very western-looking and may represent early Muslim warriors rather than members of a local Iranian warrior class. Samarkand fell to the Muslims in 712 AD and a year later the first Arab embassy was sent to the Emperor of China. A few years after that another delegation, this time specifically from Samarkand, presented the Chinese ruler with a number of mail hauberks.⁷⁵ Such sparse evidence cannot justify any firm conclusions, though it might indicate that Ushrusana was somewhat richer than Sughd in terms of weaponry. It was, after all, closer to Farghānā, the assumed source of much such arms and armour. Samarkand was not itself recorded by the later Arab geographer Muqaddasī as producing arms, only harness and horse-furniture; whereas Farghānā certainly was so recorded.⁷⁶

The entire Zarafshān valley remained disturbed throughout the Umayyad period, with rebellions and at least one major incursion by the Turkish Khāqān between the fall of Samarkand in 712 AD and the

74. Rice, Ancient Arts of Central Asia, pp. 93 and 102.

75. Mahler, op. cit., p. 71.

76. Ibid., p. 73.

start of the ^CAbbāsīd revolution in Khurāsān in 747 AD. Mā Warā' al Nahr at first remained loyal to the Umayyads but seems soon to have accepted the ^CAbbāsīds. Perhaps this resulted from a Chinese threat that eventually came to grief at the battle of Talas in 751 AD. Certainly Ushrusīya warriors from Ushrusana soon formed a distinct group within the ^CAbbāsīd army, and appeared in Iraq in the latter half of the 8th century.⁷⁷ Perhaps they fought, as their largely Buddhist ancestors were reported by Chinese historians as fighting, as mounted archers.⁷⁸ Certainly such warriors appear at Piandjikent, though they do not dominate the numerous battle frescoes in this palace.

A bowcase for two unstrung bows and a box-type quiver in which arrows lie points uppermost are carried on the left and right hips respectively by most Piandjikent warriors. This applies whether they are on horseback or on foot, wear armour or not (Fig. 428). Bows are rarely shown being used in these battle scenes, however, either by cavalry or infantry. Most of the latter are probably dismounted horsemen, judging from their equipment, though it ^{may} be more correct to suggest that the warriors of Piandjikent were content to fight in either fashion. As such they would be comparable to the Caliphs' first eastern troops, though being unlike the ^CAbbāsīds' later, strictly Turkish, recruits.

Art evidence would suggest that in Piandjikent the spear was the most widely used cavalry weapon (Figs. 429 and 430), as one would expect among the military élite of a settled and urbanized area. Every horseman used stirrups, but despite this fact the older two-handed thrusting technique of lance-play is preferred, at least by

77. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," loc. cit.

78. Mahler, op. cit., p. 69.

the artists (Fig. 430). Only in one case (Fig. 429) is a small round shield, probably on a guige, also clearly carried by such cavalry, though it also appears in one other very damaged panel (Reception Hall, VI/26). In fact, shields are rare in the art of all Turkistān, east and west (Figs. 454 and 463). This could be a case of iconographic conservatism. Yet documentary evidence proves that the two-handed technique was still used in the Muslim world at least as late as the 14th century. Such a style of lance-play, unlike the couched lance of medieval Europe, entailed fencing with the spear.⁷⁹ It cannot be regarded as a primitive tactic and its continuing effectiveness is indicated by its reintroduction, in a somewhat modified form, into early 19th century Europe. Polish lancers were responsible for this revival,⁸⁰ the Poles having themselves adopted such weapons from their various Tatar and Turkish foes from the 15th century onwards. Hence, it would seem more likely that the armour of Turkistān gave sufficient protection on its own, and that this style of lance-play was considered effective. Note that whereas relatively simple styles of spearhead, such as types B and C, predominate in Piandjikent and the rest of western Turkistān, more complicated forms such as types F and J are characteristic of Chinese-influenced eastern Turkistān (Fig. 61A).

The sword, though almost always carried, seems rarely to be used and then generally only in an emergency (Fig. 430). Such a tactic mirrors early written sources from the Muslim period such as the Shāhnāmāh. Here champions almost invariably began their duels with spears, then moved to swords or maces when their spears had shattered. These Turkistānī swords sometimes seem to have been magnificent weapons

79. Nicolle, "The Impact of the European Couched Lance on Muslim Military Tradition," pp. 6-7.

80. Z. S. Lenkiewicz, "Influence of Polish Arms, Armour and Militaria on Western Europe," Gladius, XV (1980), p. 82.

with extremely long, slender and perhaps tapering blades. Hilts are generally long and curved (Figs. 430 and 436). Such curved hilts are sometimes so extreme as to look like umbrella handles. The trefoil pommel, generally considered to have been of Iranian origin,⁸¹ also appears. Quillions are occasionally very small (Fig. 430) but could also be long. Decorated scabbards are invariably slung from sword-belts by two straps to a pair of D-shaped bulges, so characteristic of Central Asian sword-furnishings (Figs. 429 and 430). They are, however, often hidden behind decorative rosettes (Figs. 428 and 436).

This style of hanging also appears on an even more typical Central Asian weapon, the large dagger hung horizontally across the waist. The limited written sources and multitude of pictorial sources both confirm that warriors generally carried such weapons, whether in battle, in armour, or at a feast (Figs. 430, 438, 439 and 440). Early Muslim romances also indicated that such a tradition persisted long after the coming of Islam. I believe that these weapons were more than simply daggers. They were in reality small single-edged swords of the type later to be known as the khanjar. They may indeed be the original of the medieval European single-edged falchion, which came into fashion following the Crusades, or may have shared the same ancestry as the European Dark Age scramasax. According to Muslim written sources they were a warrior's last line of defence, to be used after arrows were spent, spear broken, sword blunted and mace bent.

In the art of Piandjikent, as in many other parts of Turkistan and China, such single-edged small swords were kept in strangely shaped "expanding" scabbards (Figs. 436, 439 and 440), which might indicate curved blades. It is also among these early khanjars that one

81. Hoffmeyer, "Introduction to the History of the European Sword," pp. 46-48.

tends to find non-symmetrical quillons (Fig. 435) of a type that were to be seen on similar Muslim weapons. Unfortunately, these large daggers or small swords do not appear out of their scabbards at Piandjikent. Yet we may see comparable, often curved, blades in use in the Turfan area of eastern Turkistān (Figs. 462, 465 and 466).

The military technology of this latter area was, of course, very similar ^{that of} to Ushrusana.

Another weapon of clearly Turkish origin to be illustrated at Piandjikent was the lasso (Fig. 436). Throughout the early Middle Ages it was regarded by non-Turks as a device particularly characteristic of the nomadic Turkish and Mongol peoples. It would not become common in Islamic art until after the Saljūq conquest of Iran, and remained relatively rare even then.

The Piandjikent frescoes are even richer in armour than they are in weapons, and the information they provide on the detailed construction of Central Asian defences is unsurpassed. Helmets are of a standard pointed shape. Some are clearly of a spangenhelm type (Figs. 428 and 429), but generally this is only suggested by their fluted appearance (Figs. 430, 431 and 439). Nevertheless, an overall shape that rises to a point, coupled with a lack of evidence for metallurgical techniques capable of hammering such helmets from a single sheet, make a segmented construction most likely. This could either be of the true spangenhelm form in which large segments are fixed to an exterior frame, or of a splinted style in which smaller segments are linked directly to one another. Both forms of construction were known in pre-Islamic Central Asia, as is confirmed by surviving specimens from the Crimea (Fig. 101).

Many such helmets are shown with nasals, but these often seem so small as to be useless. This is perhaps another artistic convention

(Figs. 429 and 439), as one such nasal is continued to its presumed full length (Fig. 428). Even more common are broad, and in some cases clearly laminated, cheek-pieces or reinforced chin-straps (Figs. 428, 429, 430, 439, 440 and 431). These were again seen in ^{variously dated} nomad grave-sites in the Crimea. Piandjikent also confirms that the mail head-protection worn with helmets in the Iranian and Central Asian world was an aventail and not a coif. In the first place, such mail is never seen without a helmet (Figs. 428-431, and 438-440). Secondly, warriors without helmets, doing homage to a leader (Fig. 432) or having been caught unprepared (Fig. 430), wear padded arming caps of a type not seen again until they reappear in 13th century European manuscripts. The mail around the neck and face is, thirdly, never attached to a mail hauberk (Figs. 429, 431 and 438-440). In a number of cases these mail aventails are also drawn up over the wearer's face, leaving only his eyes exposed (Figs. 429 and 431). By great good fortune such mail face-protection is also twice illustrated unfastened and hanging loose over the chin-strap (Figs. 433 and 440).

Body armour at Piandjikent consists of two major garments, the mail hauberk and the lamellar cuirass. The former, generally with three-quarter length sleeves and reaching below the knees, could be worn on its own with or without a surcoat (Figs. 429, 430, 438 and 439), or beneath the cuirass (Figs. 428, 433, 435 and 438). Lamellar itself was generally of metal, with iron or bronze small and narrow lamellae similar to those seen in much of Iran and Central Asia (Figs. 330 and 332). It formed skirts (Figs. 428 and 433) and chest-high cuirasses whose upper parts appear either to have consisted of decorated short-sleeved, probably leather, boleros, or to have been covered by such decorative additions (Figs. 428, 438 and 440).

The finest such shoulder-covering, bolero-shaped garment at

Piandjikent has its sleeves shaped like gaping animal's heads (Fig. 440). This feature was, however, more common in eastern Turkistān (Fig. 66) where simpler, more rational forms of comparable shoulder protections were widely illustrated. It is again seen in the late 9th century Ūstrūkhāna frescoes, not far from Piandjikent (Fig. 446). Could such garments, if they existed outside the realm of fantasy, be the original of that mysterious "Leopard Skin" armour, known as bebr bayān, worn by Rustam in the Shāhnāmāh?⁸² It is worth noting that Firdawsī describes this babr bayān as being worn over a jawshan of lamellar and a zirih of mail.

Larger lamellae, probably of leather, are less frequently shown at Piandjikent (Figs. 435 and 437). On the other hand, leather lamellae have been found in quite some numbers in the drier conditions of eastern Turkistān (Fig. 460).

The fact that lamellar sleeves do not appear at Piandjikent may not mean that they never existed beneath those short-sleeved boleros. They are clearly shown on another equally famous source from the area of Ushrusana, the leather-covered early 8th century shield from the castle of Mug (Fig. 443). In almost all other respects the horseman shown on this shield is identical to those slightly earlier warriors of Piandjikent. Note that on this somewhat crude picture, the vertical lines between individual lamellae are not drawn, whereas the horizontal lines indicating rows of lamellae are so drawn. Short-sleeved lamellar cuirasses such as this are more common in the art of eastern Turkistān (Figs. 454 and 462), though the earliest representations come from an area nearer to China than to Iran.

82. Firdawsī, op. cit., pp. 435 and 953.

Sleeveless lamellar cuirasses did, however, exist and are illustrated on a rather less well-known, and certainly less well-dated, crude silver dish. It is probably 8th or 9th century and almost certainly comes from Turkistān (Fig. 444). It has many parallels with Piandjikent, though its lamellar lawshan seems closer to those seen in early Muslim art. Note the large, distinctively Turkish, tassel beneath the horse's throat-lash, the "horse-brasses" on crupper strap and pectoral (Figs. 430 and 436), the spangenhelm with its mail aventail drawn up across the wearer's face, the short-sleeved mail hauberk, and above all the sleeveless lamellar cuirass that gives every impression of reaching beneath the aventail to the shoulders. Only the bowcase on the left hip, of a type designed to take a strung rather than unstrung bow, could suggest that this silver dish was 9th century or even later.

Armour for the limbs was also common at Piandjikent, certainly far more so than in pre-Islamic Iran. Mail chuasses are shown only once (Fig. 438), but . . . greaves for the lower half of the legs seemed more common (Figs. 429, 430, 433 and 439). Although in some cases such leg coverings might be mistaken for boots slit up the sides, in others their laminated construction is indicated, though never very clearly (Figs. 429, 430 and 439). In eastern Turkistān chausses for legs and feet (Fig. 61A) might have been more popular. To get a clearer view of laminated greaves such as those suggested at Piandjikent, one must return to Ushrusana, to the late 9th century frescoes of Ūstrūkhāna (Fig. 446). Here such greaves are clearly hinged down the outside and joined on the inside, as were those of later-medieval and Renaissance Europe.

Laminated vambraces are more clearly illustrated at Piandjikent (Figs. 430 and 440). Like similar examples at Ūstrūkhāna, they are

built up of laminated pieces, hinged down the outside and joined on the inside. Since such hinges precluded any flexibility within such greaves and vambraces, one must assume that their laminated construction reflected a general inability to construct armour, or indeed helmets, from large sheets of metal. Vambraces of presumably similar construction are also shown on that early 8th century shield from the castle of Mug.

Mention has already been made of the surcoat or tunic which is generally, though not invariably, worn over mail at Piāndjikent (Figs. 429, 430 and 439). This habit of hiding one's armour under ordinary clothing was to become characteristic of the subsequent Muslim centuries, and as such will prove the single greatest problem in the study of early Islamic arms and armour.

Whereas we have plenty of pictorial evidence from pre-Islamic Ushrusana and the upper Zarafshān valley, we have nothing from neighbouring iron-rich Farḡhānā and the upper Sīr Daryā. Farḡhānā does, however, play a bigger role in the written sources. Its inhabitants are generally regarded as Turkish by origin and speech, though east-Iranian by culture.⁸³ As such they would have differed little from their neighbours in Ushrusana and Sughd. What we know of their military traditions does, in fact, seem to bear this out. In addition to being recruited by the Caliphs, the Farāghina also served in Byzantium. There these pharganoi were described as archers who formed one unit of the Emperor's hetaireia guard.⁸⁴ Forty-five of these warriors even reached Italy in the early 9th century as part of a mixed Byzantine contingent sent to cow the Lombards.⁸⁵ Whether or not these pharganoi

83. C. Cahen, "Djaysh," Encyclopedia of Islam, second edition, II, pp. 504-509.

84. Howard-Johnson, op. cit., pp. 83-85.

85. Ibid., p. 80.

were Muslims is not mentioned, any more than is their equipment. Chinese sources of the same period do, however, describe combats between champions in Farghānā to celebrate the New Year, in which all warriors wore cuirasses.⁸⁶

Farghānā was to remain for many centuries one of Asia's major iron-working and arms-producing areas, fuelled by the coalfields of Isfara. This was despite the region's being effectively divided between the Muslim-ruled middle reaches of the Sīr Dāryā around Binkath or Shash, and the upper reaches which were under the eastern Turkish Karluk state. This latter state also controlled the mineral-rich Semirechiye region north of lake Issyk Kul. The western reaches of the Sīr Dāryā similarly remained outside Muslim control, being under the western Turkish or Ghuzz state. Farghānā's fame and prosperity as a metallurgical centre seems, however, to have declined under the Qarākhānids. This dynasty expanded in the mid-10th century from an area just east of Farghānā, to unite many of the by now superficially Muslim Turkish tribes along the Caliph's north-eastern frontier.⁸⁷

Written information becomes available after the arrival of the Arabs, though there is no reason to suppose that Islam's originally tenuous hold on the Sīr Dāryā had much, if any, effect on the military traditions and technology of Farghānā. Islam's first conquest was transitory to say the least, being little more than a raid and the imposition of tribute in 715 AD.⁸⁸ The local rulers promptly requested Chinese help and were able to throw off Arab suzerainty.⁸⁹ This reassertion of independence may have taken place in 724 AD when an

86. Mahler, op. cit., p. 67.

87. Knobloch, op. cit., pp. 27-31 and 56.

88. Ibid., pp. 23-24.

89. Rice, Ancient Arts of Central Asia, p. 220.

Arab army was defeated by the Turkish Khāqān Su-Lu of the Türgesh tribe from immediately north of Farghānā. This Khāqān^{was}/nominal overlord of all non-Muslim Transoxania. In this battle the Turks were, somewhat surprisingly, described as lighter and more manœuvrable than their Arab and Persian foes, although the Arab cavalry proved more successful in close combat.⁹⁰ This almost certainly reflected the fact that these Turks were mostly tribal nomads, rather than settled communities such as those now falling under Muslim rule. The Chinese apparently tried to take advantage of the ^CAbbāsīd revolution in Khurāsān to invade Mā Warā' al Nahr in 748 AD, but were defeated in the decisive battle of Talas in 751 AD. This, coupled with a northerly offensive by the Tibetans eight years later which broke the back of Chinese power in east Turkistān, ensured that Islam rather than China would dominate west, and to a lesser extent eventually east, Turkistān. Meanwhile, the Turkish peoples, of whom the Farāghina were but one, would gradually be drawn into the Muslim world.

Such a process lay in the future. Metal-rich Farghānā was to remain partially independent or within the easternmost of two Turkish states built on the ruins of China's Central Asian power, and partially under a very loose Caliphal suzerainty. What role the Farāghina played in Umayyad Transoxania in those few years between their first submission to a Muslim army and the establishment of the ^CAbbāsīd Caliphate is not known. Like the Ushrusīya they were soon serving in the Caliph's armies, and in fact were recruited early in the 9th century in an apparent effort to replace feuding Arab regulars and excessively arrogant Khurāsānīs. Their numbers appear to have been quite considerable. These were free troops, not slave mamlūks, and having been enlisted as adults they naturally took their own military

90. Gibb, op. cit., pp. 65 and 70.



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traditions, and probably their own equipment, with them to Iraq. Al Ma'mūn and al Mu^ctasim soon, however, started recruiting larger numbers of Turkish captives as mamlūks from beyond Farḡhānā, though free Ushrusīya and Farāghīna still apparently enlisted. Eventually, after a long struggle, the Caliph's new mamlūk Turkish troops ousted their predecessors from positions of power and prestige, just as Iranianized Turks and half-Turkish Iranians had ousted those who preceded them.⁹¹

One may fairly assume that Ushrusana, with its great wealth drawn from the transit trade of the Silk Road, purchased the bulk of its weaponry from its famous arms-producing neighbour. Yet one might also be able to shed some light on the military technology of Farḡhānā from its neighbours to the east, from that area which was in effect the next-stop-but-one along the Silk Road from Piandjikent. Here the oasis-dwellers may still have been largely Indo-European Sughdians, though with an increasingly important Turkish element.⁹² East Turkistān, or Kashgaria as it was otherwise known, could be divided into three artistic zones. Just over the Tien Shan from Farḡhānā was a central zone stretching in an arc from Yarkand, through Kashgar itself, eastward to the Bagrach Kol lake. To the south was the smaller zone of Khotan, which was culturally close to Tibet and Kashmīr. Further east was a third small zone, under greater Chinese influence, lying around Turfan. In fact, the mixed Turko-Sughdian civilization of Kashgaria was to

91. C. Cahen, "Les Changements techniques militaires dans le Proche Orient médiéval et leur importance historique," in War, Technology and Society in the Middle East, V. J. Parry and M. E. Yapp eds., (London 1975), p. 121; Cahen, "Djaysh," loc. cit.; Ayalon, "Preliminary Remarks on the Mamluk Military Institution in Islam," pp. 51-52.

92. Rice, Ancient Arts of Central Asia, pp. 176-177; Knobloch, op. cit., pp. 52-55.

survive both Muslim and Chinese pressures for many centuries in the Semirechiye area and the city of Balāsaghūn, near the Issyk Kul lake north-east of Farghānā, well into the 12th century.⁹³

If the central zone of Kashgaria did, in any way, reflect the military traditions and technology of Farghānā north of the narrow Tien Shan range, as would seem reasonable, then it betrays a number of minor variations from the more Iranianized Zarafshān valley and Ushrusana. Yet there was, in general, more similarity than difference. Helmets were more varied than in Ushrusana and included true spangenhelms (Figs. 454 and 463), plus those of splinted and apparently lamellar construction (Figs. 61A, 61B, 65 and 455). Similar helmets are clearly shown in the smaller eastern zone (Fig. 464) where a lamellar aventail or coif was also illustrated. This latter feature may, in fact, be part of a coif that elsewhere appears on its own, both in the central zone (Figs. 61A, 455 and 458) and in the east. Laminated cheek-pieces of the type illustrated at Piandjikent do not appear in Kashgaria, though lamellar cheek-pieces do (Figs. 61A and 67). Leather helmets and armours are more common in China and the Chinese-influenced eastern zone of Turfan. Finally, mail aventails of very Iranian style also appear amid many others of uncertain construction being worn by warriors whose armours have raised collars of a type not seen in the Iranian world since Parthian times (Fig. 61B).

In armour there was an even greater similarity between east and west Turkistān. Lamellar was again the main form of defence, as it was in China in the T'ang period.⁹⁴ Cuirasses with short sleeves were common in Kashgaria, particularly in the 8th and 9th centuries

93. Knobloch, loc. cit.

94. Thordemann, Armour from the Battle of Wisby, 1361, p. 258.

(Figs. 61A, 454 and 455), and perhaps the sleeveless variety was considered an older, 6th or 7th century style in this part of the world (Fig. 67). The lamellar skirt, perhaps also covering the abdomen, might also have been worn, just as it was in Ushrusana (Figs. 61B and 453). Although mail was seen in 8th century Kashgaria (Figs. 61A and 61B), it is not clear whether the illustrations show mail panels providing flexibility to an otherwise somewhat inflexible cuirass, or show mail hauberks worn beneath such cuirasses.

There were, however, two major differences between the armours of Kashgaria and those of Ushrusana. One has already been mentioned; namely, those extravagantly raised collars so characteristic of central Kashgaria (Figs. 61A, 61B, 450, and 453). This style is also seen in China where it might have been developed into a distinctive form of leather gorget. The collars of Kashgaria may, of course, also have been tightened across the throat in battle, as seems to have been the case with comparable T'ang Chinese gorgets (Figs. 474, 478 and 479).

The second, and perhaps more important, difference between eastern and western Turkistān concerned quilted armour. This was rarely seen in Transoxania and Khurāsān after the fall of the Parthians, but it clearly persisted in Kashgaria. In fact, quilted garments, whether defensive or otherwise, have remained a feature of Turkish and Mongol costume throughout Central Asia until modern times. In the period under review, quilted or padded clothing seems to have been commonly worn under lamellar or leather armour. It often provided the only protection for the arms (Figs. 61B, 65-67, 450 and 453). Of course, weight for weight, quilted material provides excellent protection against cutting weapons such as swords, though not against penetrating weapons like arrows or spears. Some of these sources, so far interpreted

as quilted armour, may, however, show the stitching of a particular form of scale armour said to have been "invented" by a Chinese military leader in the third quarter of the 8th century. In this style small iron scales were fastened to the inside of a linen or silk foundation garment.⁹⁵

Limb defences in Kashgaria differed from those to the west in various ways. The standard vambrace, hinged longitudinally, perhaps appears once (Fig. 454), while others of lamellar are also shown (Fig. 61B). Greaves protecting the shins and lamellar chausses (Fig. 61A) have already been mentioned.

The surcoat was not worn over armour in Kashgaria and, interestingly enough, we have to wait until the Mongol eruption of the 13th century for the idea of wearing armour as a top-layer to reappear as a dominant fashion in the Muslim east after the 10th century. Before leaving this matter of simple fashions in costume, there is evidence for a possible oriental origin for the Muslim tirāz. This was a partially informative, partially decorative, and very distinctive band worn on the upper arm throughout most of the Muslim world from the 9th century onwards. It may appear on the arm of a presumably east-Iranian "foreigner" in the 5th century Ajanta frescoes of India (Fig. 76), and it was certainly adopted as a decorative device in Islam by the close of the Umayyad era_^ (Fig. 122). Yet this fashion of having some sort of panel around the upper arm of an outer garment is first clearly indicated in Chinese art of the mid-6th century, originally "barbarian", (photographs xcvi-xcix) northern Ch'i dynasty_^. In such sources practically every item of equipment and clothing is purely Central Asian in style. The supposed tirāz next appears in Turkistān just as Islam was sweeping towards or across the area_^ (Figs. 333 and 436) so perhaps we have here yet another aspect of

95. Mahler, op. cit., p. 112.

material culture that Islam owed to Turkish Central Asia.

Horse-armour is a puzzle in Kashgaria. It almost certainly appears on a very fragmentary carving from the southern region of Khotan (Fig. 60) and thereafter continued to be popular in China (Figs. 471-473). Though it may have been used in the early Muslim west, it was not revived in widespread popularity until the Mongols erupted from Central Asia. Might this indicate that horse-armour continued to be used in what are now Sinkiang, Mongolia and the Baykal region between the 9th and 13th centuries?

Another region of Turkistān that was to have a profound impact on the Muslim world was the vast homeland of the true nomadic Turks. These steppe-lands stretched from the Ta Khingan mountains on the borders of Manchuria to the Carpathians of Rumania, though narrowing to little more than a single pass at the Dzungarian Gates between the Altai and Tien Shan. Both these latter ranges were, of course, exceptionally rich in iron and other mineral resources. Meanwhile, the broad swathe of the Eurasian steppes has itself been aptly described by M. Lombard as the arena of those "ateliers sidérurgiques nomades"⁹⁶ who played such a vital role in the military technology of the early medieval world.

Turkish nomads certainly took the opportunity of the confusion of the Arab conquest of Khurāsān to infiltrate this area,⁹⁷ much as they had been attempting to do for centuries past. Once the Muslim conquest had, however, been consolidated, the frontiers between settled and nomadic zones were once again sealed.⁹⁸ While it would be an

96. Lombard, Les Métaux, passim.

97. O. S. A. Ismail "Mu^ctasim and the Turks," Bulletin of the School of Oriental and African Studies, XXIX (1966), p. 12.

98. Ibid.

exaggeration to say that all the settled areas were occupied by the Muslims by the end of the 8th century, this was apparently true of the northern frontier from the Caspian, via the Aral Sea, to the Sīr Dāryā. Beyond this area, as already described, western and eastern Turkish states now reappeared along traditional nomadic lines of organization. The western Oghuz Turks, or rather one of their sub-tribes known as the Saljūqs, were to play a vital role in Islam in the 11th and 12th centuries.

How far the equipment of these western Turks changed between the 7th and 9th centuries is unknown, but it was probably very little. Between 629 and 645 AD they were described by a Chinese visitor as "clothed in fur, serge and fine wool, the spears and standards and bows in order, and the riders of camels and horses stretched far away out of sight."⁹⁹ These troops were the guards of the Khān of the western Turks, and the mention of camel-mounted warriors is particularly interesting. Even in Arabia, where the dromedary is a speedy and relatively responsive animal, warriors rarely fought on camelback. Here in the valley of the Sīr Dāryā the camels in question were probably of the two-humped Bactrian variety, strong and patient though singularly sluggish beasts. Hence we may assume that the Khān employed mounted infantry similar to those who have recently been credited with giving the first Muslim armies their notable strategic mobility.¹⁰⁰

Unfortunately there is an inevitable, and very troublesome, gap in pictorial and archaeological evidence that might otherwise have added flesh to the bare bones of our knowledge of the weaponry and appearance of these warlike neighbours of Islam. Even such

99. Mahler, op. cit., p. 61.

100. Hill, The Mobility of the Arab Armies in the Early Conquests, passim; Hill, "The Role of the Camel and the Horse in the Early Arab Conquests," passim.

illustrations as are available are all too often at the centre of much controversy. The magnificent Nagyszentmiklos treasure from Hungarian Transylvania is a case in point, and a very important one. Its golden ewer illustrates two warriors, an archer riding a mythical beast and a cavalryman with a prisoner (Fig. 445).¹⁰¹

A strong Sassanian influence in the purely decorative aspects of this ewer have often been remarked. The equipment is, however, more Central Asian in style. The archer uses the thumb-draw with a rather crudely represented type-A bow, comparable to an 8th or 9th century example excavated at Moshchevaya Balka in the north Caucasus (Fig. 411B).

One feature of the horseman himself also demands immediate comment, and that is his clear lack of stirrups. It seems highly unlikely that an artist who has put such effort into rendering every other item of armour and equipment would simply forget to include stirrups, particularly as grave-goods indicate that various nomadic peoples considered stirrups important enough to be buried with the deceased. Obviously, this horse-warrior either comes from a time before stirrups appeared, or was one of a tribe or people who were slower than their neighbours in adopting the new device. This would suggest a close proximity to Sassanian or immediately post-Sassanian Iran where stirrups do not seem to have been generally adopted before the late 7th or early 8th centuries (Figs. 331 and 339).

This ewer illustrates other interesting items of harness and decoration, such as the throat tassel. Tassels under horses' throat lashes are rarely seen at P'andjikent (Fig. 436), but are apparent a little later in 8th century art from the same area (Figs. 443 and 444).

101. G. László and I. Rácz, A Nagyszentmiklosi Kincs, (Budapest 1978), pp. 107-108.

They had, of course, been common in east Turkistān (Figs. 61A and 466) and China under "barbarian" rule since the 6th century. This form of decoration also appears at early 7th century Sassanian Tāq-i-Bustān, with so much other horse-furniture of Central Asian origin (Fig. 330).

As a last decorative feature there is the knotting of the horse's tail. This is again first seen in Sassanian Iran (Figs. 339 and 341), although here the pattern so formed generally consists of a single loop. Such a fashion was to persist in Muslim Iran. Although a double-loop was sometimes represented, as on the Nagyszentmiklos ewer, it was not to be widely seen until the Saljūq invasion. To this one must add an incident related by al Balādhurī, concerning a raid by al Yazīd ibn al Muhallab against al Qīkān in Afghānistān in the year 664/5 AD. "He met eighteen Turkish horsemen riding horses with shortened (mahdhūfah) tails. They attacked him but were all slain. Al Muhallab then remarked: How much faster at manoeuvring their horses were these barbarians than we were. He (therefore) had the tails of his own horses shortened and was the first Muslim to do so."¹⁰² Perhaps the tying of the tail of one's horse was in general a Turkish fashion, while the two-loop style might have been specifically west-Turkish.

Various items of the warrior's own equipment may also help identify his origins. The pennon on his lance, for example, is identical to some seen at Piandjikent (Figs. 429 and 439), while a similar form with four rather than two streamers appears on the controversial "Siege" silver plate from Turkistān, now in the Hermitage. This latter piece of metalwork will feature prominently in a later chapter.

102. Al Balādhurī, op. cit., p. 608.

The warrior's spangenhelm, with its long helmet-laces, could be Sassanian or Turkistānī. Its pointed shape recalls the latter while its straight brim, helmet-laces and lack of cheek-pieces draws one towards the former. The closest parallels are perhaps found in Iran (Figs. 41 and 330) and the 5th century Avar Crimea (Fig. 101). Yet there are enough similar helmets in both west (Fig. 444) and east Turkistān (Fig. 454) to prevent this helmet from helping us overmuch. The same goes for his mail aventail. Indeed the rider's short-sleeved mail hauberk could come from anywhere in western, though probably not eastern, Turkistān.

Finally, there are those extraordinary splinted vambraces and greaves whose construction seems to have no parallel outside Dark Age England (Fig. 553) and Scandinavia. Of course, the 7th century Nordic world was under strong Central Asian influence via trade, though these Nagyszentmiklos limb defences are more likely to have been local and perhaps simplified versions of those laminated vambraces and greaves seen at Piandjikent and elsewhere in Turkistān.

This sum total of evidence is not necessarily as contradictory as it might at first seem. The dominant influence on the armour and equipment of the Nagyszentmiklos ewer is clearly Central Asian, in particular from the western Turkish and Transoxanian region. Subsidiary influences were Sassanian Iranian and, to a lesser degree, Romano-Byzantine. Thus we may be drawn to the Caucasus region, probably to those steppe-lands to the north of the mountains. Hence my own preference is for a late 7th or early 8th century, Alan or Khazar, origin for the Nagyszentmiklos ewer. If this is correct, then it would thus have come from an area recognized not only as a major iron-mining and arms-producing centre, but also as a region rich in gold, silver,

copper and lead.¹⁰³ Such a conclusion could also shed a great deal of light on those arms-rich regions that were to remain Islam's northern, and often belligerent, neighbours for many centuries.

With their warlike and, in arms at least, wealthy background, it is not surprising to find Turkish warriors being eagerly recruited by the Caliphs. Some true Turks, as distinct from partially Iranianized Farāghina and Ushrusīya, are known by name from the early ^CAbbāsīd armies, long before Mu^Ctaṣīm started to recruit them in large numbers.¹⁰⁴ They were apparently highly regarded as armourers as well as warriors, as is confirmed by Chinese sources. One such individual, named Wāṣif, became Mu^Ctaṣīm's chief armourer.¹⁰⁵

Yet such information concerns the eastern end of Islam's Turkish frontier. Turks would also have an important impact elsewhere. In the central sector the Turks of Jurjān, having been defeated by Yazīd ibn Muḥallab in 716/7 AD, had to offer as tribute four hundred warriors with their turs shields and tīlsān cloaks.¹⁰⁶ These latter appear to have been hoods or mantles considered by the Arabs as typically Persian costume.

Further west the Khazars were certainly not crushed by the Muslims. Their troops had earlier fought, albeit reluctantly and as prisoners, for the Sassanian ruler of Iran in the 6th century.¹⁰⁷ These were probably cavalry. Such troops still formed the bulk of the Khazar army in its struggle against the Arabs in 722-737 AD, when the Turkish

103. Lombard, Les Métaux, passim.

104. Ismail, op. cit., pp. 14-15.

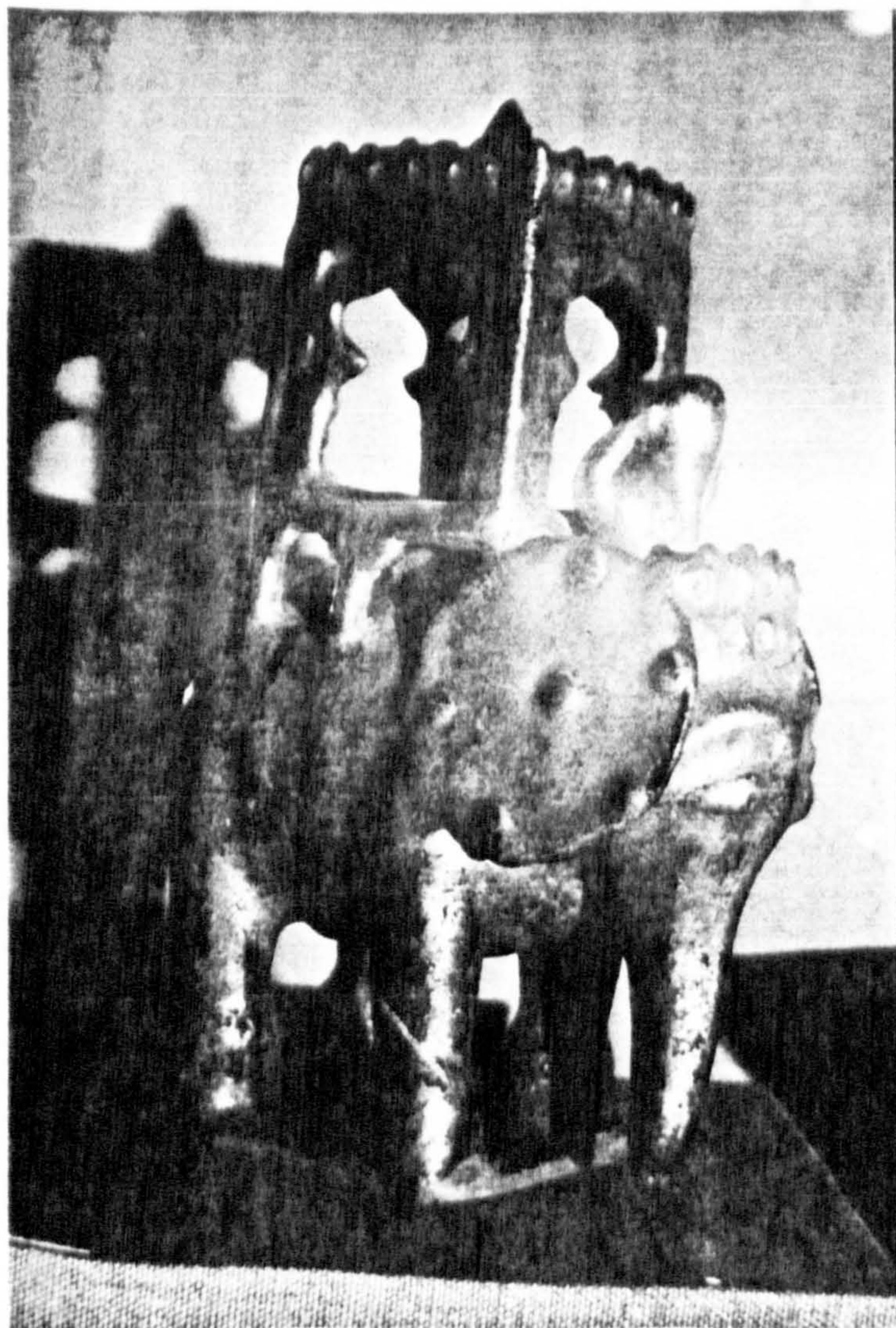
105. Lombard, Les Métaux, pp. 170-171.

106. Al Balādhurī, op. cit., p. 472.

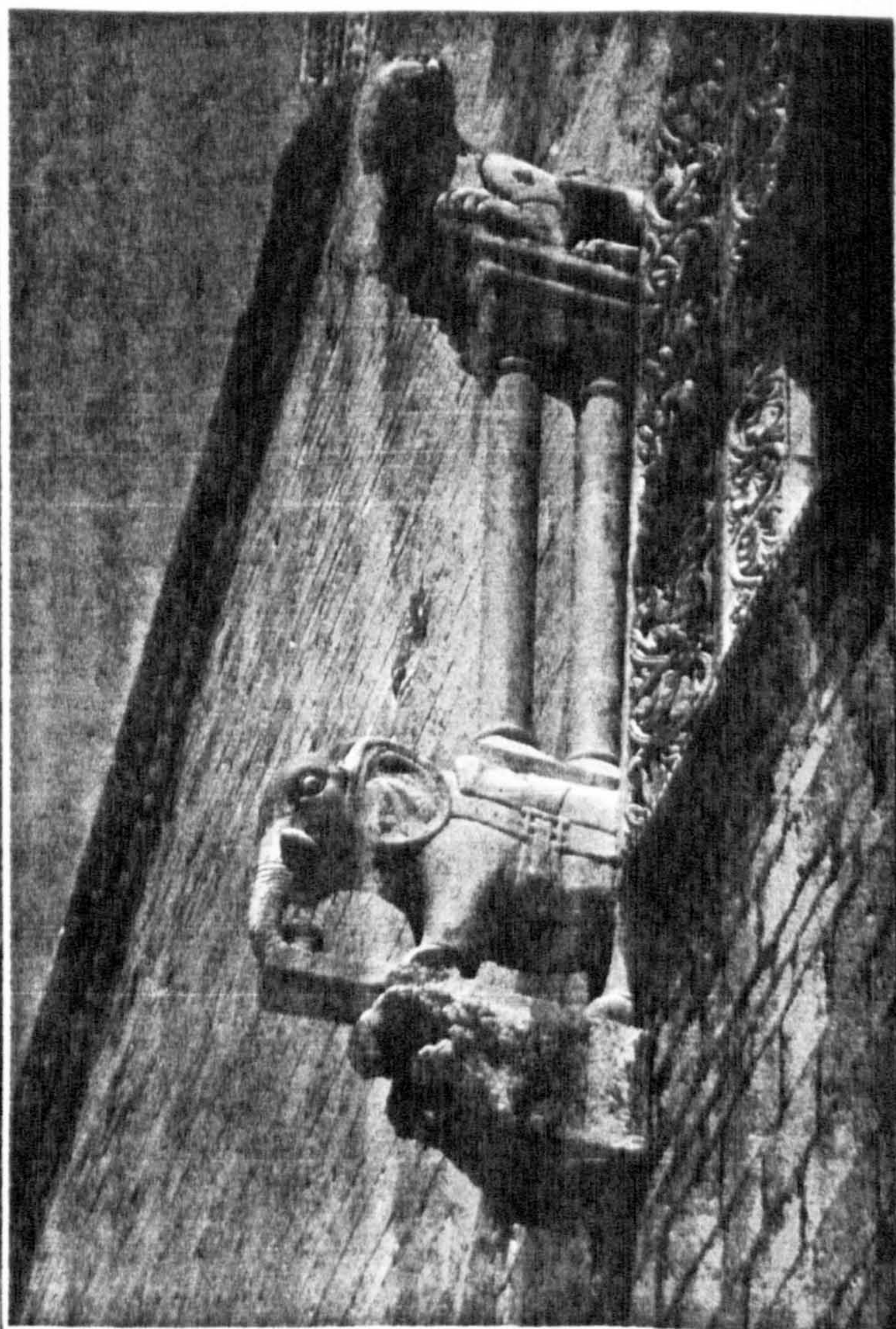
107. Christensen, op. cit., p. 362; Darko, "Le Rôle des Peuples Nomades Cavaliers," p. 91.



CII



CIII



CIV

heavy cavalry particularly distinguished itself.¹⁰⁸ By that time Turks were apparently already resident around Sinope, in Anatolia on Islam's north-western flank,¹⁰⁹ where they had been invited by the Byzantine Emperor in an effort to strengthen his defences.

This then was the huge, diverse area that bordered Islam to the north, large provinces of which were rapidly incorporated within the Muslim world. Even larger areas were subsequently converted, though at first superficially, to Islam. The Turkish steppes remained an area from which numerous conquerors and huge migrations were to erupt across the Muslim world within a few centuries of the first rush of Arab conquest. Had this area not been so advanced in its military traditions and iron-working technology, its levels of achievement in these fields would still have had a vital bearing upon the military technology of early Islam. Taking its political importance and its technological capabilities together, it can, therefore, hardly be denied that Central Asia was militarily the most important region conquered by, or adjacent to, the civilization of Classical Islam.

India

A large portion of what might be regarded as the Indian cultural region was conquered by the Arabs in the 8th and early 9th centuries. Thereafter the subcontinent faced Islam across the Indus plain for many centuries without any further major loss of territory. Not until the latter part of the period under review did most of northern India fall under Muslim domination, and even then its distinctive and creative Hindu civilization had surprisingly little impact on Classical Islam, particularly in the military field. Only in the

108. A. Koestler, The Thirteenth Tribe, the Khazar Empire and its Heritage, (London 1976), p. 28.

109. Ahrweiler, op. cit., pp. 5-6.

13th century, when the Muslims of India found themselves giving refuge to the victims of Mongol conquests elsewhere, did Islam really take root culturally and politically. Only then, it seems, did a distinct Indo-Muslim tradition of military technology and tactics develop from a fusion of Turkish and Indian traditions.

There is also a great deal of doubt surrounding the weapons of early India. While it may be correct to suggest that many so-called Indian swords in the early Arab world came from Malaysia or Indonesia rather than India proper, it is surely an exaggeration to further suggest that swords were rare in India because of their absence in Hindu religious epic.¹¹⁰ These tales dated from a very distant past, while the art of India in the pre-Islamic and early Islamic centuries clearly illustrates an abundance of swords and daggers.

The export of Indian swords has already been mentioned, and although some completed weapons or their basic materials might have come from the East Indies, others almost certainly originated in the Indian subcontinent. Indian swords also show various distinct features, though these developed and changed between the Gupta era and the 10th century. Above all there was the shape of the blade which, in India, was almost always of a heavy cutting rather than thrusting style. Indeed, to have thrust with many such blunt-ended weapons would have been quite ineffective. Whether these swords were the asi or khadga, straight and double-edged weapons of the Upanishads,¹¹¹ or the long, two-handed nistrimsa cutting sword of ancient India,¹¹² is not known.

110. Fatimi, op. cit., pp. 202-203.

111. Holstein, op. cit., pp. 6 and 9.

112. A. L. Basham, The Wonder that was India, (London 1967), p. 134.

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Pictorial sources seem to confirm the dominance of foot-soldiers in pre-Islamic India, which is not, however, to suggest that cavalry were unknown or insignificant. Most written sources, from Greek observations to Vedic literature, agree that the Indians were noted infantry archers,¹¹³ while as late as the 13th century there was no indication that the Hindus were inferior to their Muslim foes in archery.¹¹⁴ Traditionally, the Indian bow was made of the same bamboo as were certain spear-shafts. Its string was of split cane and its range was short. Severe wounds could, however, be caused by the broad, barbed Indian arrowheads which were often also poisoned. Worse still, the flimsy Indian arrow-shafts tended to break when being removed from a wound,¹¹⁵ leaving the arrow-head embedded. These broad and barbed arrow-heads do appear in art (Fig. 486).

Hindu India appears, in fact, to have been military rather backward, though in many other respects culturally very advanced. Hence it had little to offer its neighbours in the way of military technology. One major exception might have been its war-elephants, since there was no real competition in this field. Many unjustified jibes have been made at the expense of these beasts in warfare, claiming that they were unreliable, as dangerous to friend as to foe, and merely a military extravagance under whose spell so many oriental potentates foolishly fell. Such arguments, which largely date from the gunpowder era, are convincingly contradicted by Simon Digby in his vital work

113. Darko, "La Tactique Touranienne, I," p. 447; Hill, "Some Notes on Archery in the Roman World," p. 2; Fatimi, op. cit., pp. 202-203.

114. S. Digby, War-Horse and Elephant in the Delhi Sultanate, a Study of Military Supplies, (Oxford 1971), p. 17.

115. Kubārakshah, op. cit., pp. 242-243; McEwen, op. cit., pp. 92-93.

on the Delhi Sultanate.¹¹⁶ It would also seem unlikely that the hard-bitten, quarrelsome dynasts of eastern Islam would have indulged in such expensive animals if they had not provided some military advantage, even if only psychological. It is also in this area that we probably find the main Indian contribution to early Islamic technology and tactics.

Whereas those few elephants used in the 9th century by the Saffārids of eastern Iran seemed to provide transport for the siege train,¹¹⁷ those employed by the ʿAbbāsīd Caliphs themselves probably had a fighting role. According to al Khatīb al Baḡhdādī, they carried a crew of eight Sindhī warriors and were covered by caparisons of brocade or silk. These elephants were not, however, protected by armour.¹¹⁸ Some were probably introduced into Egypt by the Ṭūlūnids,¹¹⁹ but for parade purposes only. One may assume that the handful of war-elephants in mid-10th century Būyid Persian forces, whose actual employment in battle was nowhere recorded,¹²⁰ were ridden by Indian or Sindhī warriors. Detailed descriptions of war-elephants were next given by Firdawsī in the late 10th or early 11th centuries. Such animals might, therefore, have been employed by the Sāmānids. If so, they were then armoured and carried archers in towers on their backs.¹²¹ Comparable war-elephants were certainly used by the following Ghaznawids,

116. Digby, op. cit., pp. 50-53.

117. C. E. Bosworth, "The Armies of the Saffārids," Bulletin of the School of Oriental and African Studies, XXXI (1968), pp. 547-548.

118. Al Khatīb al Baḡhdādī, "Ta'rīkh Baḡhdād," in A. A. Vasiliev, Byzance et les Arabes, II, (Brussels 1950), p. 76.

119. Beshir Ibrahim Beshir, op. cit., p. 70.

120. Bosworth, "Military Organization under the Būyids of Persia and Iraq," p. 165.

121. Firdawsī, op. cit., pp. 480 and 1280.

particularly in the 11th century by which time this dynasty had, for the first time, brought large areas of Hindu northern India under Muslim rule. Such Ghaznawid war-elephants, again presumably ridden by Hindīs; or Sindīs, were heavily armoured and carried four mailed warriors on their backs.¹²²

Warriors from the Indian sub-continent also served in eastern Islamic armies in various capacities other than that of elephant handlers. Before Sind was fully converted to Islam, mamlūks were apparently recruited from this area and from Hind beyond the river Indus.¹²³ Muslim Sind and Multān, under their own dynasty of Arab Quraysh governors, then remained outside the mainstream of Islamic history for virtually three centuries. Nevertheless, some warriors from these areas seem to have sought their fortunes abroad, in particular with the Ṣaffārīds of Iran in the 9th century. Hindu troops may also have been recruited, though they would apparently have formed a separate corps under its own leadership within the Ṣaffārīd army.¹²⁴ The Ghaznawīds of the 11th century certainly employed large numbers of Hindu infantry, again under their own commanders,¹²⁵ while in the 13th century Delhi Sultanate even Hindu cavalry are mentioned.¹²⁶

Unfortunately, Sind and the lower Indus valley are among the least-known areas of the Caliph's' Empire. They were also among the most politically isolated, and as such would in any circumstances

122. C. E. Bosworth, The Ghaznavids, (Edinburgh 1963), pp. 115-119.

123. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," p. 55.

124. Bosworth, "The Armies of the Ṣaffārīds," p. 547.

125. Bosworth, The Ghaznavids, pp. 109-110 and 113-114.

126. Yar Muhammad Khan, The Army under the Sultans of Delhi (1210 AD-1526 AD), (Unpub. Ph.D. thesis, Univ. of London 1950), p. 27.

have had little effect on Muslim military developments. The rest of northern India was similarly to have little impact on Muslim culture until towards the end of the period under review. Even then it appears that the Turkish warrior class that finally conquered this area kept itself apart from the bulk of its subjects. Add to this the fact that Hindu culture also withdrew into itself in the face of Muslim occupation, keeping as determinedly apart as did its new rulers, and India's lack of immediate impact on Islamic military traditions becomes more understandable.



CV



CVI

CHAPTER 4

THE RISE OF HEAVY CAVALRY UNDER THE Umayyad and ^CAbbāsid Caliphates

While it is generally agreed that heavy cavalry took an increasingly important part in the wars of Islam, it is also maintained that this process did not go as far in the Muslim world as it did in Europe.¹ Yet such a viewpoint might be an oversimplification and thus misleading. The Middle East certainly never produced iron-clad cavalry weighed down in full-plate armour as would be seen in mid-14th to 16th century Europe. The equipment of such supposedly "typical" Christian knights was, however, itself an admission that cavalry armour was failing against infantry weapons such as arrows, crossbow-bolts and ultimately bullets. It might, in fact, be regarded as an aberration, an extreme reaction or a dead-end in the long history of armour, and not as its finest flowering. Islam clearly preferred to maintain a balance between protection and mobility, yet this fact must not obscure the existence, at various times and in various places, of Muslim cavalry who were, in comparison to their comrades and foes, very heavily armoured. In tactical terms it is precisely this comparison that matters, for a heavy cavalryman is simply a horseman who is relatively easy to escape from, because of his limited speed, but who is correspondingly difficult to stop because of his increased protection.

Thus, as one would expect, the role of heavy cavalry in early Islam was primarily to fight those who could not, or would not, escape. Under the Umayyads this normally meant enemy infantry, and any discussion of cavalry operations in this period cannot ignore the

1. Cahen, "Djaysh," loc. cit.

question of stirrups which were then coming into widespread use.

The stirrup clearly first developed in the Far East, though whether the Chinese, the Koreans or one of various Central Asian nomadic peoples actually invented it is still open to dispute.² Although one highly respected scholar has suggested that the Muslim Arabs first learned of stirrups from their Byzantine rather than their Iranian or Turkish foes,³ most authorities believe that they adopted the device, even if they had known of it earlier, during their conflicts with Turks or Turkified Iranians in eastern Iran or Transoxania.⁴ That would be during the late 7th or early 8th centuries. The illustrative evidence makes it abundantly clear that stirrups were a normal item equipment in much, if not all, of immediately pre-Islamic Turkistan⁵ (Figs. 429, 430, 434, 436, 437, 451, 456, 459 and 473). Unfortunately, the legs of the Tāq-i Bostān horseman are so damaged that it is impossible to see whether or not this invaluable source originally portrayed stirrups (Fig. 330F).

Al Jāhīz of Basra, writing perhaps less than a century and a half after the event, states quite categorically that the Arabs

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2. Bivar, "Cavalry Equipment and Tactics on the Euphrates Frontier," p. 286; A. D. H. Bivar, "The Stirrup and its Origins," Oriental Art, I (1955), p. 62; Haldon, "Some Aspects of Byzantine Military Technology," p. 22; R. H. Hilton and P. H. Sawyer, "Technical Determinism: The Stirrup and the Plough," Past and Present, XXIV (1963), p. 92; E. Oakeshott, The Archaeology of Weapons, (London 1960), pp. 85-86; O. J. Maenchen-Helfen, The World of the Huns, (London 1973), p. 206.
 3. Bivar, "Cavalry Equipment and Tactics on the Euphrates Frontier," p. 290.
 4. Cahen, "Les Changements techniques militaires," pp. 114-115; V. J. Parry and M. E. Yapp, "Introduction," War, Technology and Society in the Middle East, (London 1975), p. 8; L. White Jr. "The Crusades and the Technological Thrust of the West," in War, Technology and Society in the Middle East, V. J. Parry and M. E. Yapp edits., (London 1975), p. 99.
 5. G. Frumkin, Archaeology, Soviet Central Asia, (Leiden 1970), p. 76.

knew of iron stirrups in the late 7th century but consciously chose not to adopt them, believing that their use weakened a rider.⁶ He even went on to suggest that the decline of Arab military and political dominance within Islam coincided with their final adoption of these aids to riding.⁷ Al Jāhīz further reported a tradition that those of the original ansār, Muhammad's helpers in Madīnah, who had taken up various Persian habits including the use of stirrups, were persuaded to abandon them when they adopted Islam.⁸ These statements by al Jāhīz were made in reply to the shu'ūbī criticism of the Arabs' original lack of stirrups and their habit of riding either bareback or with a frameless flat saddle, hardly more than a padded saddle-cloth, that provided the rider with no support.⁹ The editor of this vital text states in a note that it was the Umayyad governor of, at various times, Khurāsān, Fārs and Basra, al Muḥalab ibn Abī Sūfrah, who, late in the 7th century, ordered the troops under his command to use iron stirrups, though unfortunately without quoting his source.¹⁰ Such a story would certainly fit the normally accepted theory that it was contact with the Turks and Turkified Iranians of Transoxania and their cultural cousins in Khurāsān that inspired the Muslim Arabs to adopt the stirrup.

Of perhaps even greater interest is the statement by al Jāhīz that stirrups not of iron were known to the early Muslims and perhaps even pre-Islamic Arabs.¹¹ Far too little attention has been

6. Al Jāhīz, Al Bayān wa'l Tabyīn, pp. 19-20.

7. Ibid., p. 21.

8. Ibid., p. 20.

9. Ibid., pp. 13-14.

10. Ibid., p. 20 note 1.

11. Ibid., pp. 19-20.

paid' to such loop-stirrups of rope or leather, ... which naturally left no archaeological traces, in the entire question of the history and spread of the stirrup. Its existence has been suggested in early India,¹² among the Sarmatians and even possibly the migration-period Goths,¹³ the Huns, Parthians and Scythians.¹⁴ Its continued use in 12th century Byzantine Cyprus is clearly recorded¹⁵ and has even been suggested for post-Saljūq Daghestān.¹⁶ The pictorial information is equally interesting, ranging as it does from ancient India (Fig. 71), Egypt around the time of the Muslim conquest (Figs. 134 and 137), 9th century Christian Iberia (Fig. 502), possibly early 11th century al Andalus (Fig. 497), late 12th or early 13th century Iran (Saljūq bowl, Freer Gallery of Art, Washington, no. 57.21), late 13th century Moorish Spain or North Africa as exceptionally accurately illustrated in southern France (carved capital, in situ south side of the cloisters, St. Trophime, Arles), to late 13th or 14th century Mongolia (Fig. 483). Although most of these later representations of the loop-stirrup are in a peaceful, non-warlike context such as hunting or travelling, this alone does not rule out the possibility of such primitive forms of stirrup being used in war in earlier centuries, by the Arabs as well as by others. Taken together, such diverse evidence

12. Digby, op. cit., pp. 13-14; Oakeshott, op. cit., pp. 85-86; "An Indian Copper Lotā in the British Museum," the editor, Rupam, (1926), p. 79.

13. Hilton and Sawyer, op. cit., p. 92; Oakeshott, loc. cit.

14. Maenchen-Helfen, op. cit., p. 206.

15. Anon., trans. K. Fenwick, Itinerarium Peregrinorum, The Third Crusade, (London 1958), p. 47.

16. A. Salmony, "Daghestan Sculptures," Ars Islamica, X (1943), p. 162.

would seem to make al Jāhīz's statement far from unlikely.

Throughout the first part of the 8th century, the latter part of the Umayyad era, Muslim cavalry was divided into those who wore armour and those who did not,¹⁷ with the former apparently gathered together in a special élite unit of shock-troops. Perhaps this relatively heavily armoured élite also formed that minority of Muslim horsemen who now adopted the stirrup. The role of cavalry remained, however, the destruction of already disorganized or broken infantry.¹⁸ Marwān II's military reforms at the very end of Umayyad rule changed this. By that time the bulk of Muslim cavalry seem to have been armoured, with light horsemen relegated to skirmishing and reconnaissance. Under the new system an Umayyad force would ideally be divided into small units, each including heavy infantry, bowmen and heavy cavalry. The latter's role was to make rapid, but selective and repeated, charges upon the enemy foot from behind the security of its own infantry ranks. In turn this infantry would seek to halt enemy cavalry attacks.¹⁹

Muslim heavy cavalry was thus now expected to attack prepared infantry, which meant using shock tactics rather than merely relying on greater speed and weight to further terrorize and disperse an already beaten foe. These new tactics have been said to reflect Byzantine influence,²⁰ but while this might be true it should also be remembered that it was at precisely this period that such tactics were abandoned by the constantly defeated Byzantine forces

17. Al Jābarī, op. cit., vol. II, pp. 1076, 1406, 1534 and 1704.

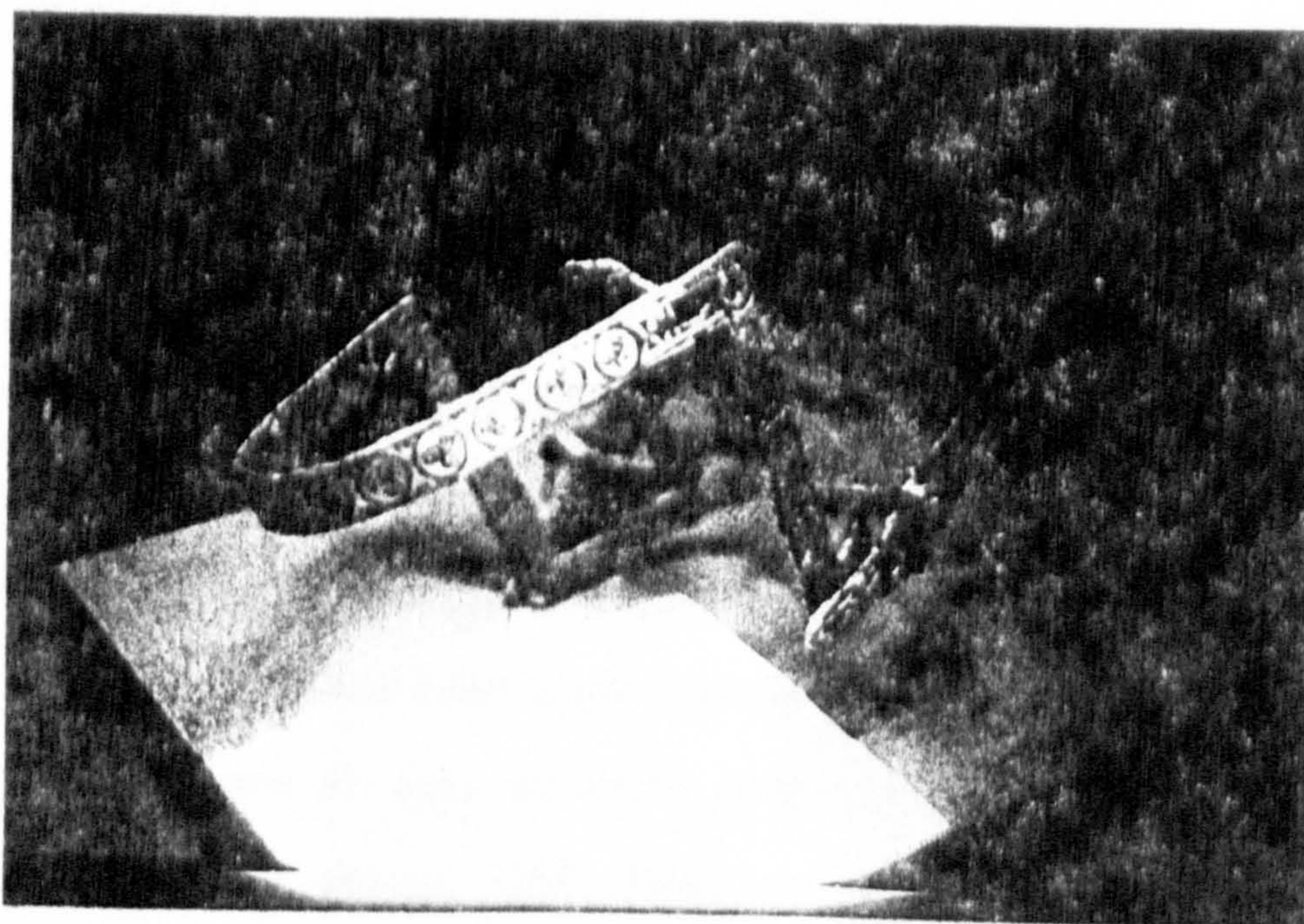
18. Ibid., vol. II, p. 591.

19. C. Cahen, "Harb," Encyclopedia of Islam, second edition, III, pp. 181-184.

20. Ibid.



CVII



CVIII

of the east.

The question of cavalry "shock" has been gravely misunderstood, perhaps since the demise of cavalry itself. All too often scholars have failed to differentiate between the realities of a suicidally violent accident, as shown in so much medieval and later art, and the presumed intentions of those commanders and horsemen involved. The question has been admirably analyzed by J. D. P. Keegan²¹ and he shows, in my opinion convincingly, that the "shock" cavalry sought to inflict was primarily moral rather than physical. Much the same seems to have been the case whether cavalry met infantry or other cavalry. If such an analysis is correct, then the armour of such shock cavalry, heavy or otherwise, was primarily to protect it from missiles shot or thrown by infantry as they tried to break up a cavalry charge before it delivered its shock. If such cavalry were seeking to close with horse-archers, then the same purpose would be served.

Umayyad cavalry at the time of 'Abd al Malik had not reached the degree of specialization, or indeed élitism, that would prevent them from dismounting and drawing themselves up defensively with their spears used as pikes, should the need arise.²² Nor would this be reached for many centuries in the Middle East. When it eventually did occur, it was a product of nomad Turkish habit rather than feudal class-consciousness.

Those tactical changes introduced or, perhaps more accurately, regularized by Marwān II reflected yet another tilt in the perpetual see-saw between offensive weapons and defensive armour. The same

21. J. D. P. Keegan, The Face of Battle, (London 1976), pp. 87 and 94-97.

22. Al Ṭabarī, op. cit., vol. II, p. 959.

process had earlier been at work in the Byzantine and Sassanian empires. In these latter cases solid formations of heavy cavalry had proved ineffective against Central Asian horse-archers who, by keeping their distance, had merely worn down their more cumbersome foes. In neither case, however, had this led to an abandonment of heavy cavalry. Instead the Byzantines evolved mutually supporting smaller units of heavy cavalry and horse-archers who could thus hope to be as tactically flexible, manoeuvrable and adaptable as their Central Asian foes.²³

When faced by strategically more mobile and primarily infantry Arab armies, these forces again failed. The Muslims, however, now found themselves facing the same tactical problems vis-à-vis Central Asian horse-archers as their predecessors had done. This is likely to have been the main reason why later Umayyad and 'Abbāsid armies apparently copied their defeated Byzantine and Sassanian foes. Byzantine, Sassanian and Muslim armies sought a solution to this problem by recruiting a number of Asiatic horse-archers into their own ranks. Yet the equipment of domestic forces also reflected the challenge, and one particular item of equipment, namely horse-armour, may be taken to illustrate this fact. Bard, chamfron and other armour for a mount were, of course, not only protection against horse-archers, but also against infantry missiles. In Byzantium the heavy scale bard of the clibanarius had apparently been largely abandoned by the time of Justinian.²⁴ Subsequently, the Avar threat forced the reintroduction of horse-armour, though in a much smaller form that only covered head, neck and forequarters.

23. Divar, "Cavalry Equipment and Tactics on the Euphrates Frontier," pp. 288-290.

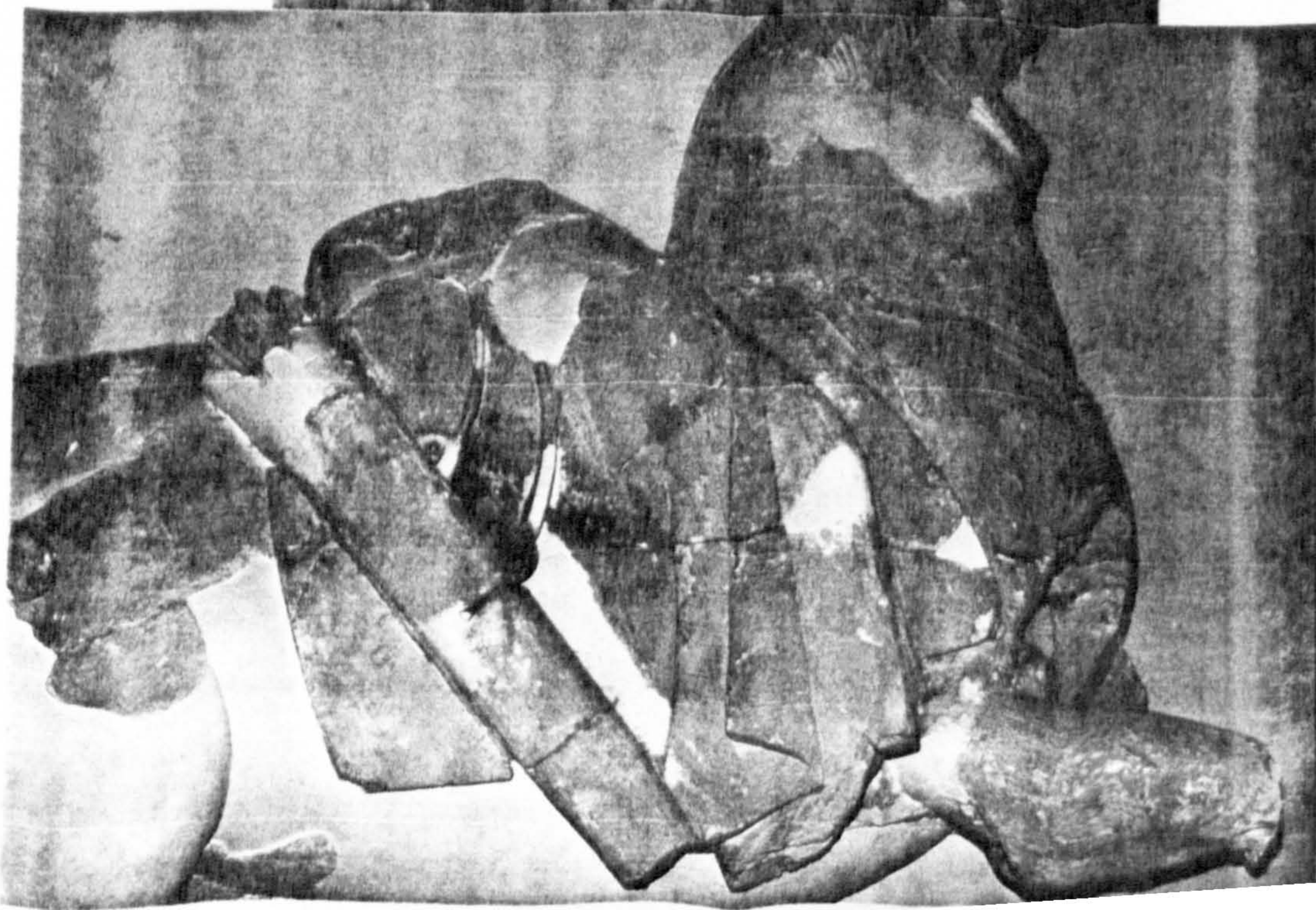
24. Haldon, "Some Aspects of Byzantine Military Technology from the 6th to the 10th centuries," pp. 18-19.



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CX



CXI

Such Byzantino-Avar horse-armour, or kentouklon, was generally of felt which resisted most arrows, though iron lamellar of the type seen at Tāq-i-Bustān (Fig. 330) was also used.²⁵ Such horse-armours were perhaps the origin of the Muslim tijfāf, rather than the earlier types seen at Fīrūzābād (Fig. 50A). Sassanian heavy cavalry in Iraq were described by al Balādhurī as mudajjaḡ,²⁶ but unfortunately this merely indicates that they were slow-moving and probably used horse-armour, without shedding any light on such bards.

Horse-armour of felt was common in Umayyad times. It was light, effective and was constructed from readily available materials. Confusion can, however, arise from the fact that men, cavalry or infantry, also wore felt armour known as tijfāf, while the term mujaffafah also referred both to men so protected and to armoured horses. More often than not, the context makes it clear that a bard is intended,²⁷ both in Umayyad and in later periods. Towards the end of the Umayyad era a mujaffafah cavalryman was further described as armed with a sword and wearing full iron armour, apparently covering his face, plus a minḡfar or coif.²⁸ Nor was horse-armour limited to the regular troops of the Umayyad Caliphate. It is recorded in use by fundamentalist Khārijī rebels in 696/7 AD, some of whom were dressed in dir^c hauberk, minḡfar coif, sā^cadanī arm-defences, and carried rumḡ

25. Brown, "Arms and Armour," pp. 445-446; Aussaresses, op. cit., pp. 6 and 58; Haldon, "Some Aspects of Byzantine Military Technology from the 6th to 10th centuries," p. 22.

26. Al Balādhurī, op. cit., p. 351.

27. Fries, op. cit., pp. 42 and 61; al Ṭabarī, op. cit., vol. II, pp. 1406-1407, 1025, 1517, 1537 and 1704.

28. Al Ṭabarī, op. cit., vol. II, p. 1704.

lances.²⁹ Such warriors were largely Arabs, as also were most Umayyad regular troops. This widespread use of felt horse-armour, although it does not appear in art, might have contributed to the Arab and Persian horsemen's reputation for being heavier than their Turkish foes in Transoxania.³⁰

The limited available art (Fig. 339) does not show early Muslim cavalry in Iran to have been very heavily armoured. In the case of this particular illustration we do not, of course, know whether the horse-archer is an Arab or, more probably, a local Khurāsānī. A small number of the latter fought for the Muslims even before Qutayba ibn Muslim reorganized the eastern armies.³¹ Heavier armour is worn by men on foot (Figs. 335 and 340),^{and} seems similar to a clearer representation of a full hauberk, in this case of scale, that was illustrated in Syria (Fig. 123). Heavy or otherwise, a horseman still fought first with his rumh spear when facing another cavalryman, only later drawing his sword,³² as would remain the fashion for many centuries.

Traditional Muslim accounts of Umayyad heroes tend to portray them as horsemen armed with lance, mace and, in some cases, two swords.³³ This latter feature probably recalls the wearing of a large khanjar in addition to a standard sword. More specific references by such historians as al Ṭabarī, describe early 8th century Umayyad horsemen wearing baydah helmets and-or mighfar

29. Ibid., vol.II, pp. 958 and 998.

30. Gibb, The Arab Conquests in Central Asia, pp. 65 and 70.

31. Ibid., p. 40.

32. Al Ṭabarī, op. cit., vol.II, p. 1909.

33. M. Canard, "Les Expéditions des Arabes contre Constantinople dans l'histoire et dans la légende," Journal Asiatique, CCVIII (1928), pp. 70 and 101.

coifs, their swords slung from baldrics and their lances in their hands while their bows could, if necessary, be laid aside.³⁴

Such a diversity of equipment is also portrayed in Umayyad art. Most of the heavy armour is shown on infantry in such sources (Figs. 122-124, 127, 141, 339 and 340). Yet this need not be a major difficulty, as at that time there appears to have been little specialization of equipment and hardly much more of military function. In one case (Fig. 122) warriors are represented with long-bladed spears of a type that will later be associated with cavalry. They are, in fact, probably horsemen as they stand in iconographic balance with apparently infantry warriors (Fig. 122) on the walls on either side of an enthroned ruler or prince at Qusayr ^CAmr. Other definite or presumed Umayyad sources show horse-archers (Figs. 119-122, 338 and 339), most of whom wear no visible armour except for helmets. A great variety of saddles appears in these and other sources (Fig. 126), and while stirrups are clearly sometimes used (Figs. 120, 126 and 338), in others they either may not, or are certainly not, ^{be} in use (Figs. 119 and 122). Such evidence further supports the thesis that the Umayyad era was a transitional one as far as stirrups were concerned. Subsequent evidence will suggest that in some areas the stirrup would not be adopted for another two centuries. Finally, one may note a slight preference for baldrics, as already suggested by the written sources (Figs. 116, 122 and 124).

Paradoxically, less pictorial evidence survives from the Iraqi heartland of the ^CAbbāsid Caliphate than from its short-lived

34. Al Tabarī, op. cit., vol. II, p. 1278.

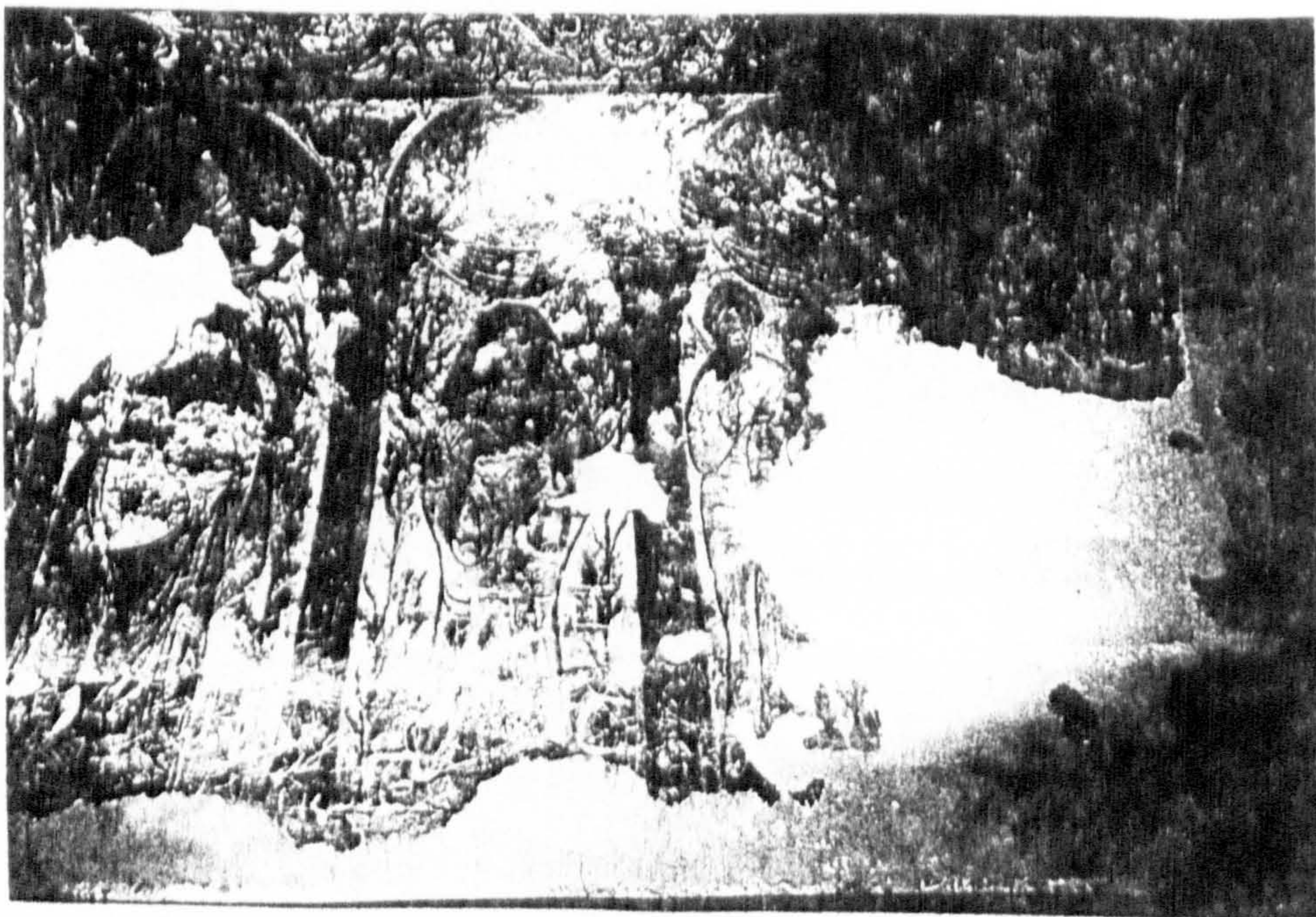
Umayyad predecessor in Syria. This problem is only partially overcome by the use of material from neighbouring areas, despite the fact that the ^CAbbāsīd army was rapidly becoming more cosmopolitan as it recruited from just such peripheral provinces. Of course, this did not happen immediately the ^CAbbāsīd dynasty seized power. Arab troops seem to have played a dominant role in overthrowing the Umayyads, although some ^{indigenous} ~~some~~ ^{Khurāsānī} troops were also involved even at this early stage.³⁵ Most of these Arab ^CAbbāsīd troops came from the east and eastern jund forces had probably already adopted many Iranian traditions. Thus, by the late 8th century, there may well have been little difference between Arab-speaking and more strictly Khurāsānī warriors from those regions. Our best available illustration of a Muslim warrior from eastern Iran, whose name of Pur-i Vahman ^{may} ~~be~~ be an Arabic construction, appears on a silver-gilt plate now in the Hermitage (Fig. 341). His equipment is, in most respects, almost identical to that of the late Umayyad horse-archer at Qasr al Hayr al Gharbī in Syria (Fig. 120).

Nor was there any major change in tactics. Early ^CAbbāsīd cavalry still cooperated with their infantry in the same manner as had the last Umayyad forces. Again cavalry was quite prepared to dismount and fight defensively as infantry.³⁶ Even as late as the early 9th century, al Jāhīz of Basra quoted an Arab military leader as advising that cavalry be trained to fight on foot in case of emergency.³⁷ Western Arab troops from Syria and the Byzantine frontier are, in these early ^CAbbāsīd decades, described as fighting

35. Ayalon, "The Military Reforms of the Caliph al Mu'tasim," p. 5.

36. Al Ṭabarī, op. cit., vol. III, p. 40.

37. Al Jāhīz, Rasā'il al Jāhīz, p. 53.



CXII



CXIII



CXIV

with spear and shield,³⁸ or in one specific case with spear, sword
 and daragah shield of ^{either} ~~Tibetan~~ ^{or Tibetan style} leather. This latter defence was,
 however, given to the Arab frontier warrior by the Caliph Hārūn
 al Rashīd. It proved most ineffective against the sword of his
 Byzantine foeman³⁹ who, by contrast, had a strong if noisy iron-
 covered daragah shield.

Although the prestige of Arab troops slowly declined at the
 centre of power in Iraq, they and their traditions persisted on
 the Anatolian frontier and among the highly effective Kharijī
 rebels of the Fertile Crescent, Arabia and western Iran. Such
 warriors, who were regarded as distinct from the almost as troublesome
 bedouin, relied primarily on their lances, though occasionally
 they would also use the bow.⁴⁰ Above all, they retained the original
 strategic mobility of early Muslim armies by leading their horses
 from mules and only riding them fresh in battle.⁴¹

On the East Roman frontier there was already a blurring of
 identities between Byzantine and Arab marcher lords and emirs
 and their followers. Although this was the land of the Greek
 hero Digenes Akritas, most changes of faith and allegiance were
 from Christianity towards Islam.⁴² This blurring is also seen
 in art of the area and era, with turbans and head-cloths appearing

38. Ayalon, "The Military Reforms of the Caliph Mu'tasim,"
 pp. 17-18.

39. Al Mas'ūdī, op. cit., vol. II, pp. 345-349.

40. Al Jāhiz, Rasā'il al Jāhiz, p. 45.

41. Al Jāhiz, "Jāhiz of Bagra to Al-Fath ibn Khāqan on the Exploits
 of the Turks and the Army of the Khalifate in General," C. T.
 Harley Walker trans., Journal of the Royal Asiatic Society,
 (Oct. 1915), p. 663.

42. R. J. H. Jenkins, "The 'Flight' of Samonas," Speculum,
 XXIII (1948), pp. 223-224.

on "enemy" troops in Byzantine biblical illustrations (Figs. 196 and 202). From the comparable, though more northern, border region of Georgia comes the finest available contemporary picture of a warrior in probably Muslim equipment. It is generally regarded as 6th or 7th century, but the distinctly Muslim-Iranian harness, saddle and stirrups of the rider in question (Fig. 412) almost certainly place him in the 9th or 10th centuries. His turban and baldric make him look like an Arab, while he might also be wearing a mail hauberk.

This was an era when Byzantium was definitely on the defensive. As such, the Empire evolved a system of guerrilla tactics known as Shadowing Warfare to cope with constant Muslim incursions.⁴³ These were generally on a minor scale, but being more frequent and originating from a wider stretch of the border than earlier and more ambitious Muslim assaults they were even more difficult to contain. Essentially, such Shadowing tactics involved large forces of light cavalry strategically placed behind a frontier screen of local infantry levies. Horse-archers played an important role in these defensive forces, but unlike those of Central Asia they normally shot at command and by ranks while their horses stood still (Fig. 203).⁴⁴ Given the evidence for Umayyad heavy cavalry and the rise of similarly equipped Turkish ghulams in the later 9th century, plus the fact that Islam was now on the offensive, it seems unlikely, as has been suggested,⁴⁵ that the Arabs had fewer heavy cavalry than the Byzantines. Unfortunately,

43. Howard-Johnston, op. cit., pp. 100-101.

44. Leo VI, Tactica, M. Joly de Maizerot trans., (Paris 1771), Inst. 6.

45. Haldon, "Some Aspects of Byzantine Military Technology from the 6th to 10th Centuries," p. 27.

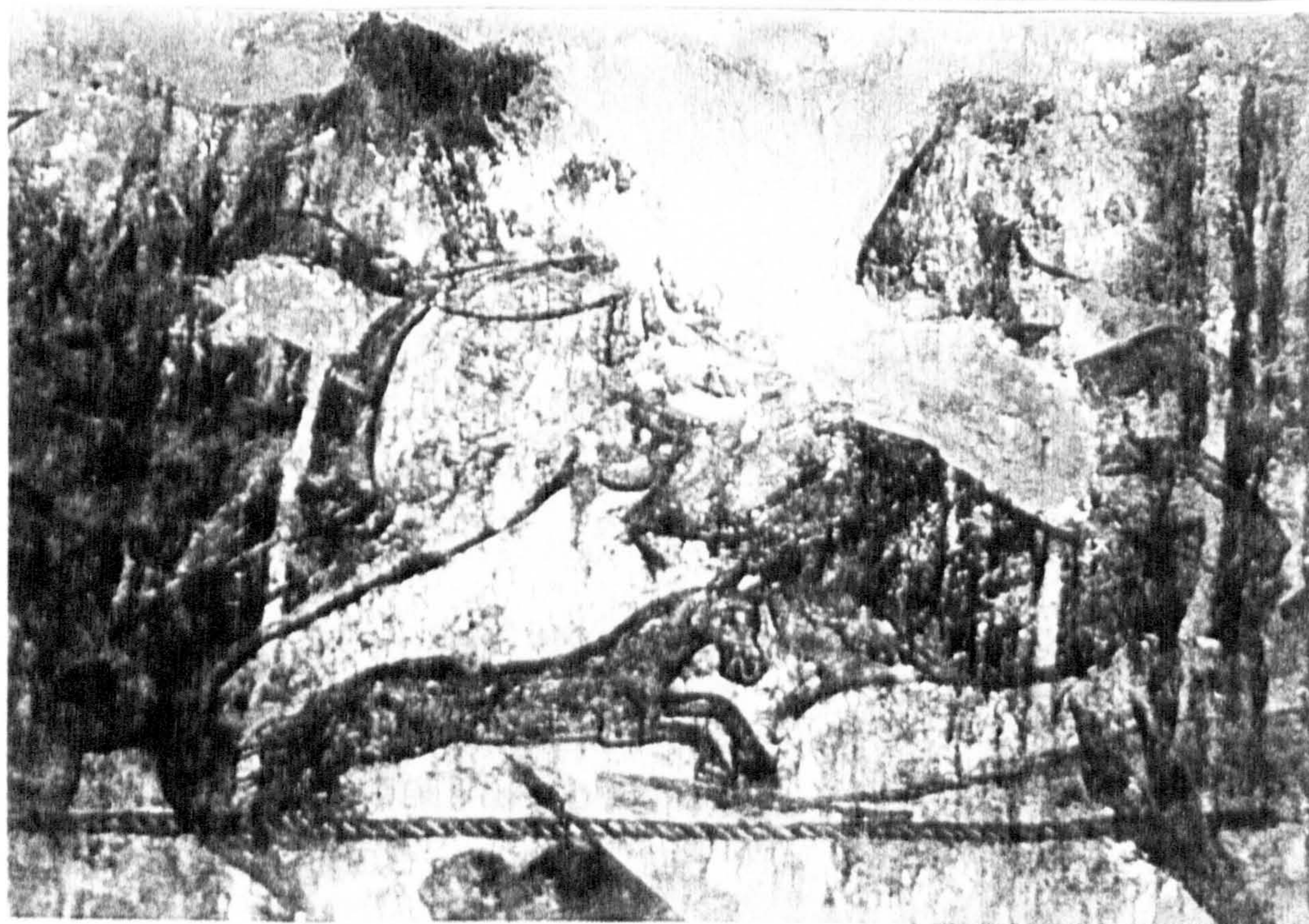
pictorial evidence from the Muslim side of the Anatolian frontier and Armenia (Fig. 241) seems only to be available from Georgia (Fig. 412). Further south, however, the Coptic art of Egypt also suggests that heavy cavalry, armoured in a local variation of Byzantine style, was known and may indeed have been widespread (Fig. 142).

When Ahmad ibn Ṭūlūn became governor of Egypt in 868 AD, he found the original Arab jund army of this province to have been largely replaced by Turkish ghulāms, and its survivors and their descendants largely civilianized.⁴⁶ Further west, however, this had not occurred and the Arab militia of Ifrīqiya still formed the core of Aghlabid power in North Africa, Sicily and beyond, through the 9th century.⁴⁷ Berber warriors may, at this time, have still largely been infantry. Berber horsemen probably still fought with javelins or large-bladed spears, bareback as their ancestors had done in ancient times. Such a style seems to be shown in some early Nubian art (Fig. 164).

Despite the maritime orientation of Aghlabid ambitions, cavalry still played an important part in their military calculations. When the Muslims attacked Spain early in the 8th century, they had to rely on ships provided by Spanish or Byzantine rebels. Hence they found difficulty in transporting sufficient cavalry, even supposing that they had this available. By the early 9th century the Muslims had their own fleet, and so the Aghlabid army that invaded Sicily could include a small corps of seven hundred horsemen. Nevertheless, they still accompanied ten thousand infantry, largely

46. Hassan, op. cit., p. 165.

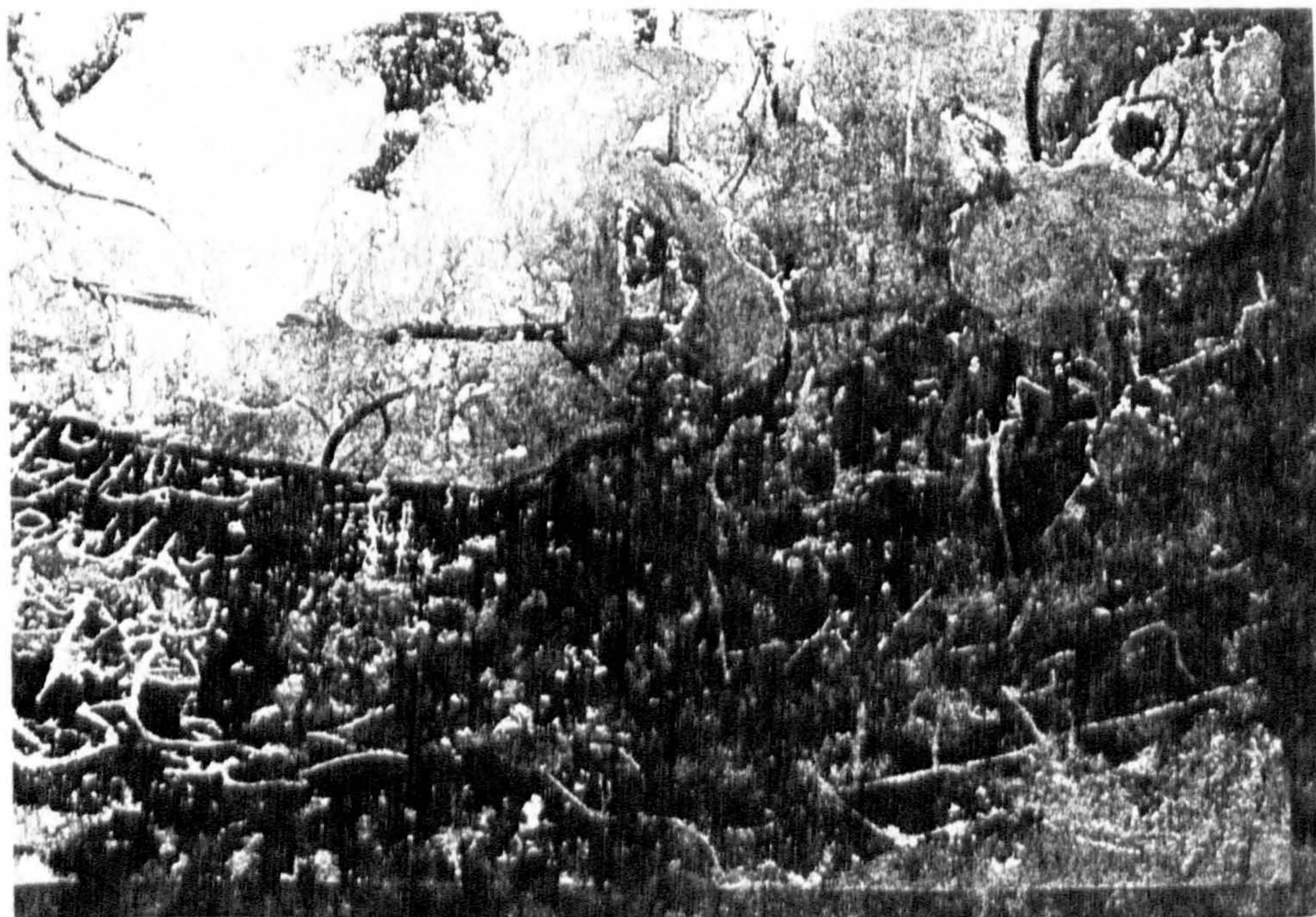
47. Ibid.



CXV



CXVI



CXVII

from the Berber Huwārah tribe.⁴⁸ Some Spanish Muslims, negroes and 'Abbāsīd Khurāsānīs also took part.⁴⁹ This desire to transport horses in relatively large numbers during operations overseas also applied to raids as well as major invasions. In 846 AD, for example, seventy-three Muslim ships gathered off the mouth of the Tiber and when they descended upon the coast on 23rd August they proved to have no less than five hundred cavalry on board.⁵⁰ Naturally, this made such raids far harder for the Italians to contain. It must also have indicated a generally more important role for cavalry in the Muslim Maghrib than had been the case at the time of the Arab conquest.

Those few Khurāsānīs who took part in the conquest of Sicily might have been the first of a new wave of Persian troops that was to change the military balance in Baghdad during the time of the Caliph al Ma'mūn. On the other hand, they could have been abnā', representatives of a force which, descended from those Khurāsānīs brought west during the original 'Abbāsīd revolution, was defeated in al Ma'mūn's coup. If abnā' they would probably have been infantry, but if they were the new Khurāsānīs of al Ma'mūn they would almost certainly have been cavalry.

Al Ma'mūn's victory over his brother Amīn in the 'Abbāsīd civil war of 811-813 AD set in motion a series of major military changes. The victory itself was largely the work of eastern troops, generally referred to as Khurāsānīs, but apparently consisting

48. A. Ahmad, A History of Islamic Sicily, (Edinburgh 1975), p. 22; Amari, Storia dei Musulmani di Sicilia, vol. I, pp. 394-395.

49. Ibid.

50. P. Llewellyn, Rome of the Dark Ages, (London 1971), p. 262.

largely of Bukhārīs, Khwārazmīs and Turks from Mā Warā' al Nahr, or Transoxania.⁵¹ Although some Arabs fought for al Ma'mūn, the majority supported al Amīn. During the final siege of Baghdād these Khurāsānīs played a slightly less prominent role, perhaps for political reasons. Nevertheless, they and their equipment are still fully described on this occasion as well-mounted cavalry, fully armed in jawshan cuirass, dir^C hauberk, tijfāf bard or gambeson, and ṣa'idah arm-defences, carrying rumh lances and Tibetan daraqah shields.⁵² During the same siege a leading Khurāsānī horse-archer was reportedly also equipped with a sword and wore a baydah helmet.⁵³ Mangonels are, not surprisingly, mentioned in al Ma'mūn's attack on Baghdād, although Khurāsānī^{infantry} are not listed as such. Yet the true east Iranian Khurāsānīs, and the abnā' in Baghdād, are known to have been excellent infantry and siege engineers.

From now on cavalry clearly played a dominant role in 'Abbāsīd armies, which they might in fact have been doing for some decades. Nevertheless, they still operated in conjunction with infantry whose defensive role, even in open battle, seems to have remained vital, although it was on its cavalry than an army now relied when advancing or retreating.⁵⁴ Persians of various sorts, generically referred to as ḥajamī, formed a major part of these new forces, but earlier Arab and abnā' units did not disappear, nor did they readily abandon their privileges. In addition, the

51. Ayalon, "The Military Reforms of the Caliph al Mu'taṣim," p. 5.

52. Al Mas'ūdī, op. cit., vol. VI, p. 453.

53. Ibid., vol. VI, pp. 461-462.

54. Al Jāhīz, Rasā'il al Jāhīz, pp. 52-53.

recruitment of eastern troops by the central government was severely curtailed once al Ma'mūn's leading general, Tāhīr Dhū'l Yamīnayn, became governor of Khurāsān in 820 AD.⁵⁵ In the meantime Khurāsānīs enjoyed a brief period of prestige and superiority in Iraq before both they and their predecessors were relegated to a second-class status by a newly recruited force of Turkish mamlūks.

Unfortunately, there are very few pictorial references for this period. On the other hand al Jāhīz gives some excellent descriptions, stating that the Khurāsānīs were better equipped than other troops, wore clothing similar to that of eastern Christian monks, had beards and wore their hair long.⁵⁶ Among the fragmented frescoes of the Jawsaq al Khāqānī at Sāmarrā (836-839 AD) there are two figures who could fit this description. One apparently has a full hauberk of vertically-linked scales, while the other grasps a sword and wears a distinctive belt with pendants of typically Central Asian origin (Fig. 314).

While these Khurāsānī warriors are described as, in various ways, identical to the Turks, both being of "eastern" culture and both practising horse-archery,⁵⁷ they are also distinguished by other characteristics of equipment and tactics. The fact that Khurāsānīs "swerve aside" during a charge⁵⁸ may reflect their reliance on the sword rather than the bow or lance,⁵⁹ or their preference for Arab-style karr wa farr tactics. Their probable

55. Montgomery Watt, The Majesty that was Islam, pp. 101-102.

56. Al Jāhīz, Rasā'il al Jāhīz, p. 16.

57. Ibid., pp. 9 and 15.

58. Ibid., p. 45.

59. Ayalon, "The Military Reforms of the Caliph al Mu'tasim," pp. 33-34.

use of the heavy Iranian horse⁶⁰ could be reflected in their heavy equipment, both for man and beast. In the writings of al Jāhiz they themselves claim to use tijfāf horse-armour and jaras bells. These might have formed part of the horse's harness, as seen in some Coptic art (Figs. 22, 134, 137, 143 and 145). I would, however, consider an eastern Turkistānī parallel more likely. Objects that have tentatively been identified as bells⁶¹ appear on the spear-shafts of 6th or 7th century armoured horsemen of the Eastern Turkish khānate at Char Chad (Fig. 69) and on an earlier representation of armoured cavalrymen from Kizil (Fig. 61B). An even more obscure item of Khurāsānī equipment has variously been rendered as bāzīkand or bāzfakand. It could perhaps refer to a form of horse-armour for neck and forequarters only, bāz meaning upper-arm or shoulder in Persian, or could be an Arabic-speaker's misunderstood rendering of the term bāzūband, a vambrace. If it was, however, a piece of horse-armour, it would be of a type already seen in 7th and 8th century Byzantium and 7th century Sassanian Iran. These Khurāsānīs also claimed to use long felt armour which they made themselves, though whether for man or horse is unclear. To these they added curved swords, or at least curved scabbards, the kāfir kūbāt mace, the tabarzīn battle-axe, the khanjar single-edged short sword and the dir^C hauberk. They also stressed their use of stirrups, which might indicate that some of their Arab rivals had not yet adopted this device.⁶²

Art from 9th century Iraq, with the exception of those fragmentary Sāmarrā frescoes, is inadequate and unhelpful (Fig. 313).

60. Lombard, The Golden Age of Islam, pp. 169-170.

61. Nowgorodowa, op. cit., p. 215.

62. Al Jāhiz, Rasā'il al Jāhiz, pp. 19-20.



CXVIII



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From Byzantium, however, there is some evidence that the increasing Iranianization, not to say Turkification, of their eastern foes had been noted. One magnificent 9th century Psalter shows various "enemy" troops, such as Jewish soldiers guarding the Tomb of Christ, wearing helmets and armour and carrying weapons all of which show strong Transoxanian characteristics (Fig. 201). Earlier styles, including the baldric, also appear in this manuscript. It is, however, possible that a strong Central Asian influence, either direct or via the Caliphate, was already being felt in 9th century Byzantine military equipment.

CHAPTER 5

CAVALRY AND THE DECLINE OF THE ʿABBĀSĪD CALIPHATE

The political role of the Turkish "slave army" in the decline of the ʿAbbāsīd Caliphate is well known. This mamlūk army of ghulāms made some Caliphs into little more than their puppets, and acted like the Praetorian Guard of a decadent Imperial Rome. Less attention has, however, been focused on the military characteristics of these troops whose impact, political and military, was felt far beyond the Iraqi heartland of the ʿAbbāsīd Caliphate.

Unlike Khurāsānī troops, who also included warriors of Turkish origin, these ghulāms were recruited as slaves by al Ma'mūn and his successor al Mu'tasim from beyond the Muslim frontier in Transoxania. At this stage many seem to have been captured as adult warriors, either by Muslims or fellow Turks. They even included aristocratic leaders of established reputation. Although many were retained by the Ṭahirid and subsequent Sāmānid dynasties that governed Khurāsān, plenty were forwarded to Baghdād.¹ There they formed a new corps owing loyalty, in theory at least, solely to the Caliph. Unfortunately, this loyalty was soon focused primarily upon their own commanders. Al Mu'tasim tried to isolate his new Turkish ghulāms from the rest of society, not only because of a growing hostility between them and the rest of the existing civil and military population of Baghdād, but also in an effort to insulate them from the rampant jealousies of existing army units. So, while the ʿAbbāsīd court came to accept the dominance of these ghulāms,

1. Ayalon, "Preliminary Remarks on the Mamlūk Military Institution in Islam," pp. 51-53.

Baghdād, with its own abnā' troops and well-established military traditions, did not. For these reasons al Mu'tasim decided to found a new capital, or rather an enlarged court, at Sāmarrā in 836 AD.² The transfer was, however, somewhat short-lived. The court returned to Baghdād in 892 AD and once again friction arose between the ghulāms and the populace, though now the Caliph was apparently prepared, when possible, to punish his more obstreperous troops.³

Although these élite ghulāms rarely took part in operations against Islam's traditional foes such as the Byzantines, they should not therefore be regarded as merely ornamental. Their role was crucial in those internal wars that were now absorbing most of Islam's martial energies.

Evidence from Iraq, almost entirely written, shows these ghulāms to have been heavy horse-archers. As such they combined the traditions of their original Central Asian homelands with those of the more disciplined cavalry of Persia, the Fertile Crescent and Byzantium. Early in the 9th century the first of these troops were described as having exceptionally obedient horses, and carrying two or even three bows plus, perhaps, a lasso. In general they were slower and more heavily armoured than the Arab Khārījī but, like these Arabs, they were skilled with the lance. Their weapon was, however, shorter and lighter than that of their rivals. In their horse-archery they again combined the traditions of Iran

2. Ibid.; Ayalon, "The Military Reforms of the Caliph al Mu'tasim," p. 4.

3. Muḥassin ibn 'Alī al Tanūkhī, The Table-Talk of a Mesopotamian Judge, D. S. Margoliouth trans., (London 1922), pp. 166-168.

and Central Asia, being able to shoot accurately forward and to the rear while at the gallop.⁴

Little seemed to have changed by the mid-10th century when the ghulāms of Mu^cizz al Dawla, Būyid ruler of Iraq, were thrown into battle against rebellious Daylamite infantry. For hours their finest troops attacked in waves, using traditional karr wa farr tactics, though shooting arrows rather than closing with lances. When these arrows were spent and they themselves were exhausted, a confusion of command led the reserve corps of "inferior" ghulāms suddenly to attack the Daylamīs. These supposedly second-rate troops were also horse-archers, wearing jubbah broad-sleeved hauberks and riding horses with tijfāf felt armour. Turkish ghulāms were, in fact, elsewhere recorded as being more effectively armoured than their Daylamī foes. Instead of indulging in horse-archery, however, these fresh troops immediately closed and broke the ranks of the tiring Daylamī infantry.⁵

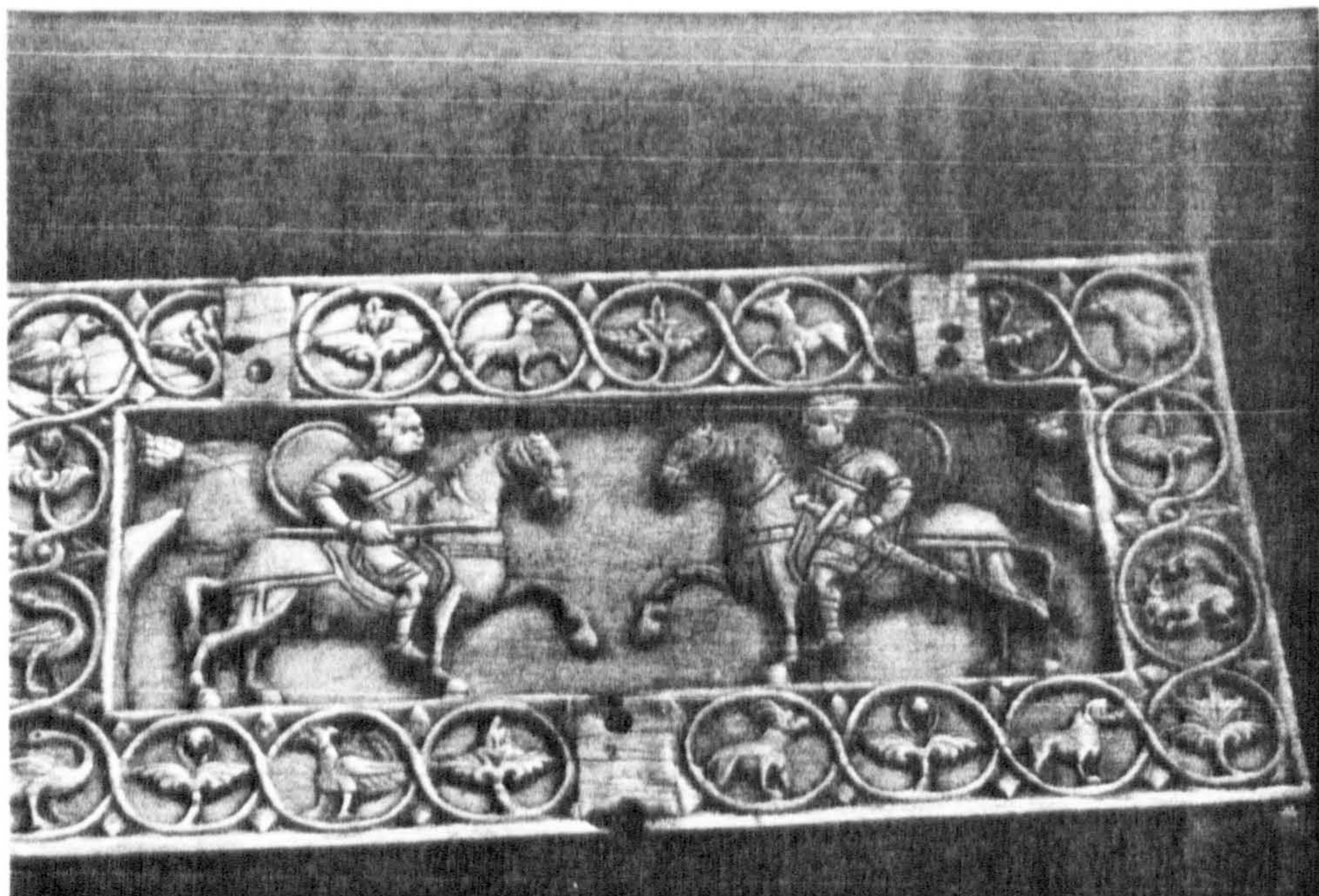
Much the same happened two decades later when what might be termed the freelance ghulāms of Syria, led by Alptegin, met a Fāṭimid force at Tawāhīn in Palestine. On this occasion the Turkish ghulāms were in alliance with their old rivals, the Arab Khārajīs. They themselves rode armoured horses while Alptegin, in armour and alternately wielding lance and sword, rode a black horse whose bard was "charged with mirrors," perhaps being of scale or lamellar.⁶

Meanwhile, up on the Anatolian frontier, it was difficult

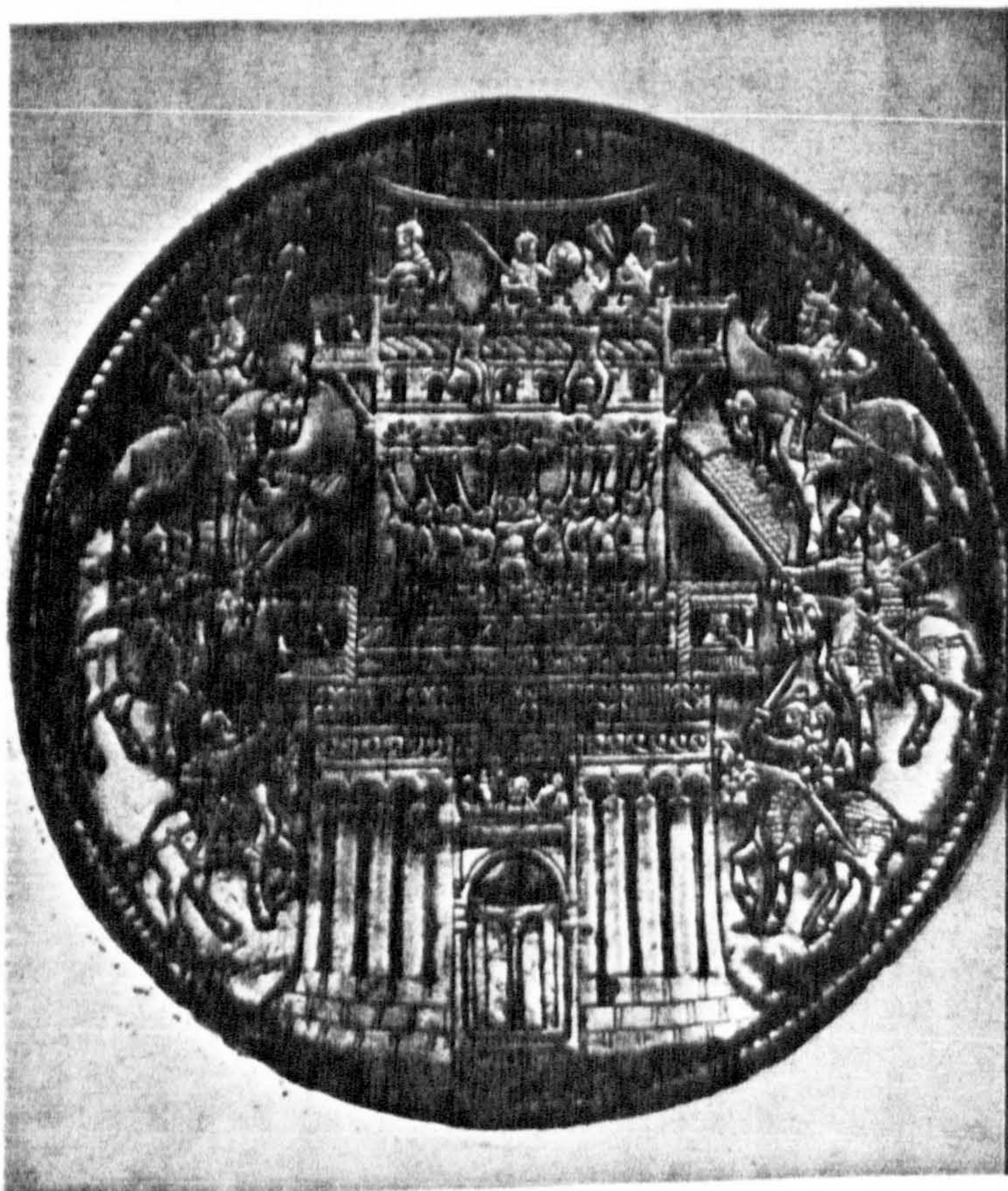
4. Al Jāhiz, Rasā'il al Jāhiz, pp. 42-45, 47 and 53.

5. Miskawahi, The Eclipse of the Abbasid Caliphate; Concluding Portion of the Experiences of the Nations, D. S. Margoliouth and H. F. Amedroz eds., and trans., (Oxford 1921), vol. II, pp. 164 and 336.

6. Ibn al Qalānisi, op. cit., p. 18; Beshir, op. cit., p. 71.



CXX



CXXI

to state with certainty who was influencing whose military technology. While the appearance of large numbers of heavily armoured cavalry in Europe might have obliged the Byzantine Emperor Nikephorus Phokas to enlarge his own corps of such troops,⁷ the style of equipment in question had originally been of Byzantine origin. Also, those areas where the Byzantines were in direct military confrontation with Catholic Christendom in the 10th century, namely Hungary and southern Italy, were certainly not renowned for heavily armoured cavalry. Indeed, Norman mercenaries were to be invited to the latter region in the 11th century precisely because local armies lacked heavily armoured cavalry with which to face the Byzantines. Nikephorus Phokas was, in fact, recorded as holding "Frankish" lance-armed cavalry in contempt.⁸ It is even possible that the kite-shaped "Norman" shield, so characteristic of the European knight or Crusader, was of Byzantine origin and perhaps ultimately a development of an Iranian infantry protection^(see Part Two, Chapter Nine). There is equally little evidence to support the belief that the Byzantines reintroduced heavy cavalry to the east when Byzantium went onto the offensive in the 10th century.⁹

While the importance of heavily armoured cavalry in Byzantium's push against the Muslim frontier is certainly reflected in Byzantine art, some sources indicate that influences were still mutual. Most obvious was, perhaps, a fashion for pseudo-Kufic decoration, particularly on shields (Fig. 221), in Byzantium. Then there was the obvious persistence of Byzantine light cavalry (Fig. 218).

7. Haldon, "Some Aspects of Byzantine Military Technology in the 6th to 10th Centuries," p. 29.

8. Ibid., p. 44.

9. Howard-Johnson, op. cit., p. 296.

Above all there is the evidence of the best Byzantine battle-picture from the 10th or 11th centuries. This illustrates the tribe of Judah attacking Jerusalem (Fig. 220B), and in it Judah, naturally portrayed as Byzantines, wear light leather cuirasses while the "infidel" Jebusites all wear heavier armour of mail, scale and lamellar.

Heavy cavalry had certainly declined in Byzantium since the 7th century. Lighter local troops had at first borne the brunt of the Muslim assault on Anatolia. Later they were supplemented by the large-scale employment of pagan Turkish nomad horse-archers.¹⁰ The new offensive cavalry forces of Nikephorus Phokas aimed to retain the flexibility of such Turkish tactics but back them up with heavy shock cavalry making controlled but powerful charges and armed with maces and heavier lances.

These new troops still made their attacks from the protection of an infantry formation, normally a rectangle.¹¹ Such tactics inevitably recall those supposedly introduced by Marwān II when Islam was on the offensive, and which apparently continued during the years of ^CAbbāsid power. What might have been new, however, was a blunted wedge-shaped cavalry formation devised by the warrior-Emperor himself. In such a formation lightly armed horse-archers, though riding armoured horses, were placed at the centre. Heavier lance-armed cavalry took station on either side while sword or mace-armed men on similarly armoured horses occupied the front four ranks.¹² The horse-armour used by such troops was again of

10. Haldon, "Some Aspects of Byzantine Military Technology in the 6th to 10th Centuries," pp. 42-43.

11. Howard-Johnson, op. cit., pp. 3, 275, 277 and 282-283.

12. Ibid., pp. 286 and 293-294.

layered and glued felt, or of iron, cuir-bouilli or horn lamellar. These bards could be limited to the forequarters, or protect the hind-parts as well. Some mail horse-armour is mentioned but is likely to have been rare.¹³ Certainly, metallic horse-armour of mail or lamellar is recorded in the poetry of those Arabs who faced it in battle.¹⁴ Naturally, riders were similarly well-protected, their helmets having aventails to cover the entire face, while many wore armour for arms, hands and feet.¹⁵ Such heavy cavalry were also involved in those civil wars that were rapidly to undermine Byzantium's new-found military might in the late 10th and 11th centuries.¹⁶ Despite this decline, a young Byzantine nobleman was still expected to be educated as a warrior with lance and bow, armour and shield, in addition to his normal cultural activities.¹⁷ As such, his training was similar to that of his Muslim counterparts across the frontier. It was, in fact, this emphasis on broader cultural pursuits in the making of a gentlemanly warrior that set Muslims and Byzantines apart from their ferociously boorish counterparts in early medieval Europe.

Byzantine heavy cavalry in the mid- and later 10th century is well represented in Byzantine art. Nor is there much reason to suppose that their foes in the Muslim provinces of Armanīyah, Jazīra, ʿAwāṣim and Syria were very different. Armour varied from a combination of scale and lamellar worn over a mail hauberk

13. Haldon, "Some Aspects of Byzantine Military Technology in the 6th to 10th Centuries," p. 38.

14. Al Mutanabbī, in Byzance et les Arabes, A. A. Vasiliev trans., (Brussels 1950), vol. II/2, p. 333.

15. Howard-Johnson, op. cit., p. 292.

16. Psellus, op. cit., pp. 35, 198, 211 and 214.

17. G. Buckler, Anna Comnena, A Study, (London 1929), pp. 181 and 183.

(Fig. 208), to a simple mail or scale hauberk (Fig. 219), or a heavier scale hauberk again worn over mail (Fig. 213B).

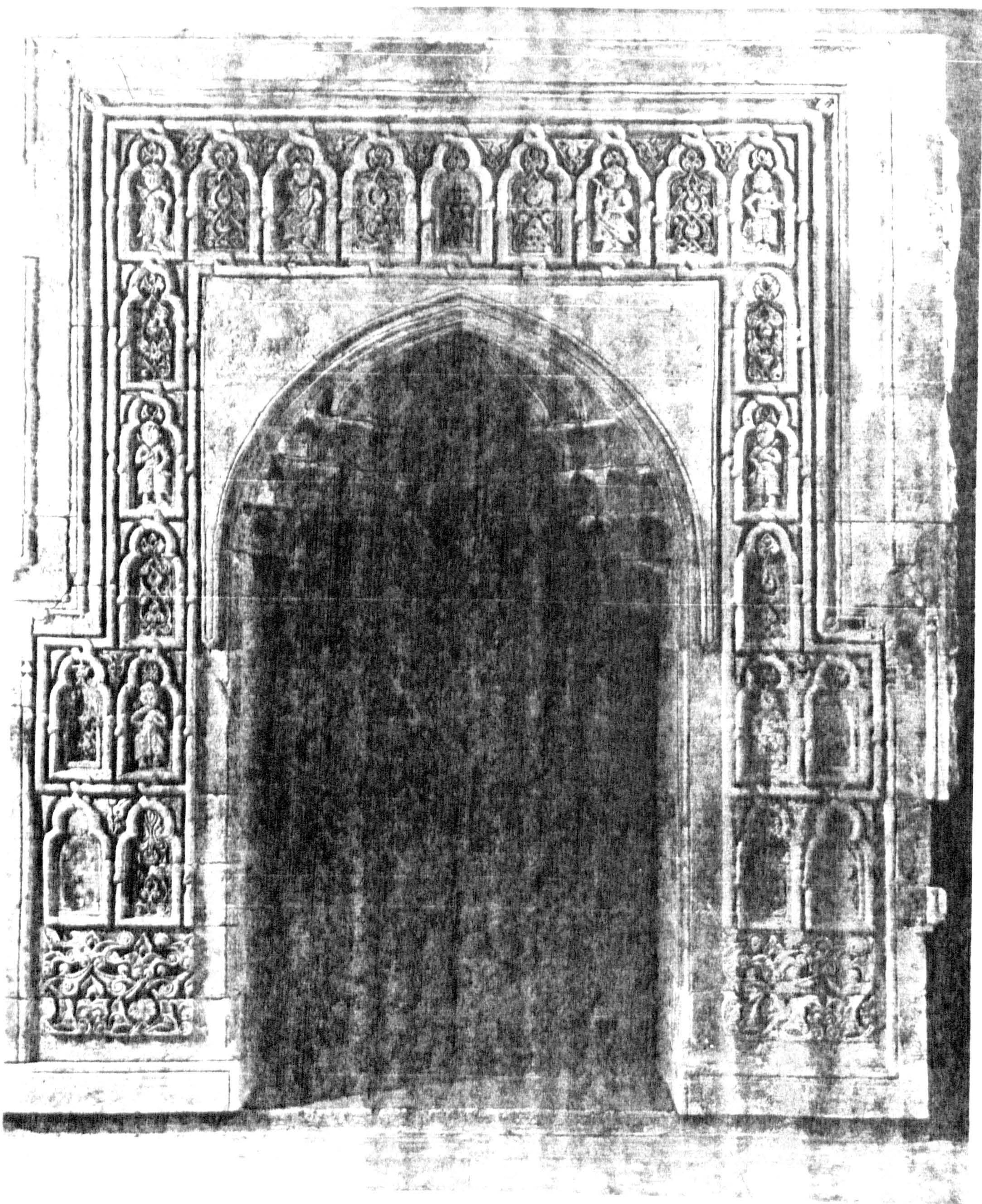
Almost all these features of equipment and tactics seem to be mirrored in Islam, which is, of course, not to say that one side was thus inevitably influencing the other in a one-way tide of military fashion. According to the Emperor Leo VI's Tactica, Muslim armies when attacking Anatolia used their cavalry from within the protection of a rectangular infantry formation, while such horsemen were armed and armoured "like the Romans" or Byzantines.¹⁸ In this instance Leo VI was probably referring to the Ṭūlūnid army that crushed a Byzantine force near Ṭarsus in 883 AD. The fact that Muslim cavalry were expected to be competent with both the lance and the bow in the late 9th century, as in earlier periods, is confirmed by Arab sources.¹⁹ Similarly, the heavy armour and horse-armour of many such troops differed little from the 9th to 10th centuries,²⁰ but once again archaeology offers limited pictorial proof from 10th century ʿAbbāsīd Iraq. The little of what is available does, however, seem to emphasize the sword rather than the bow or any other weapon (Figs. 315-317).

There seems to have been a concentration of Muslim military effort in Cilicia before it fell to the Byzantines in the mid-10th century. Considering the strategic position of the province, this is hardly surprising, nor is an emphasis on heavy cavalry in the records of those desperate years. In 947/8 AD the ʿAbbāsīd Caliph al Muṭīʿ sent a large contingent of eastern troops from Balkh,

18. Leo VI, op. cit., Inst. XVIII.

19. Al Masʿūdī, op. cit., vol. VIII, p. 48.

20. Al Kātib al Baḡhdādī, op. cit., p. 76; al Jāhīz, Nasāʾil al Jāhīz, p. 53; Miskawaihi, loc. cit.



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Hirāt, Khwarāzm, Samarqand, Farghānā and Isbījāb to Tarsus in a vain effort to stem the Christian advance.²¹ This region of Cilicia was, in fact, already known for the manufacture of various items of armour, arms and harness, while Tarsus itself was renowned as a city dedicated to war. One of the units of ghulāms stationed there was specifically equipped with armour for man and horse, plus "Tibetan" leather shields, maces and helmets.²²

Even after Cilicia fell to Byzantium, the Turkish ghulāms of Alptegin are said to have put on a fantasia of cavalry lance-play for the benefit of Emperor John Tzimisce in this area, while attempting to buy his good favour with a gift of twenty horses plus horse-armours, lances and other gear.²³ It is, in fact, generally agreed that the minor states that emerged from the fragmentation of the ^CAbbāsīd Caliphate in the Fertile Crescent modelled their armies on those of the Caliphs. Local modifications were naturally necessary and reflected trading contacts and local arms production facilities.²⁴ Some time was, however, to pass before the ^CAbbāsīd tradition of heavy cavalry declined.

One of the militarily most active of these successor states was that of the Hamdānids in Syria and the Jazīra. Although this new court was famed for a renewed flowering of Arabic literature, it was the Hamdānids' fierce resistance to Byzantine expansion that is best remembered. The degree of similarity between Byzantine

21. Canard, "Quelques Observations sur l'introduction géographique de la Bughyat at'-T'aleb de Kamāl ad-dīn ibn al ^CAdīm d'Alep," p. 50.

22. Ibid., p. 49.

23. Ibn al Qalānisī, "Continuation of the History of Damascus," pp. 85-86.

24. Bosworth, "Armies of the Prophet," p. 205.

and Hamdānid armies was undeniable and was, in fact, far greater than that between Byzantium and almost all its other neighbours. It could be seen in heavy cavalry, tactics and even fortifications.²⁵ Such parallels probably eased, and were in turn strengthened by, the baptism of Arabs within Byzantine territory and the role of those numerous Byzantine renegades who fought for Sayf al Dawla of Aleppo.²⁶

Muslim troops themselves may well be portrayed in some Byzantine art of the period. On a minor level, stylized turbans are shown worn by lance-armed cavalrymen in long scale hauberks (Fig. 210). Elsewhere the archetypal "enemy" Goliath appears, most unusually, as a heavily armoured cavalryman (Fig. 209). In this latter source the Philistine cuirasses are slightly different from those of the Israelites, and could indicate lamellar. For the first representation of mid-10th century warriors along the Taurus frontier, one must return to the unique frescoes of the "Dovecote" church at Cavuşin in Cappadocia. Here the Forty Martyrs are shown in a great variety of costumes and armours (Fig. 213A), some of which clearly show strong Muslim influence. In fact, this fresco probably portrays a spectrum of military styles from both sides of the frontier, and scale, leather, mail and perhaps felt armour can all be seen.

Written evidence from Hamdānid Syria merely confirms this identity of equipment. According to the poets, Hamdānid palace frescoes, had they survived, would probably have done the same, for battle scenes with lance and sword were a favorite theme in

25. A. Rambaud, L'Empire Grec au Dixième Siècle, (Paris 1870), p. 421.

26. Ibid., p. 435.

various buildings.²⁷ Ḥamdānid preference for the classic Arab long lance and hauberk, and the general association of archery with their Byzantine foes, is indicated in the verses of Mutanabbī.²⁸ Elsewhere this poet makes clear that an Arab cavalrman who had lost his lance was fearful of another so armed, even when he retained his other weapons.²⁹ The same would still be the case in early 14th century Furūsiyah military manuals.

How far such equipment was government issue, as it had been under the 9th and 10th century ʿAbbāsīd Caliphate,³⁰ unfortunately remains unknown. It would, however, seem more likely that free Arab warriors of the Ḥamdānid armies purchased their own weaponry from armourers in such well-known manufacturing centres as Aleppo. In those towns recorded as having produced arms, one may assume that the armourers were a distinct and specialized group of craftsmen as specialization by trade, even within the metalworking fraternity, does seem to have been characteristic of early Islam.³¹ Horse-armour was clearly used, at least by Turkish ghulāms in Ḥamdānid service.³² These men might, of course, have been heavy horse-archers. With or without horse-armour, a Ḥamdānid cavalrman's

27. M. Canard, "Quelques aspects de la vie sociale en Syrie et Jazīra au dixième siècle d'après les poètes de la cour Ḥamdānide," in Arabic and Islamic Studies in honour of Hamilton A. R. Gibb, (Leiden 1965), p. 175.

28. M. Canard, "Mutanabbī et la Guerre Byzantino-Arabe, Intérêt Historiques de ses poésies," in Al-Mutanabbī, Mémoires de l'Institut Français de Damas, (Beirut 1935), pp. 104-105; al Mutanabbī, in Dhikra Saif al Daula, A. Wormhoudt trans., (Pennsylvania 1975), p. 88.

29. Al Mutanabbī, Dhikra Saif al Daula, loc. cit.

30. Bosworth, "Armies of the Prophet," loc. cit.

31. Allan, op. cit., p. 68.

32. Al Mutanabbī, in "Byzance et les Arabes," vol. II/2, p. 321.

own equipment could be so heavy that it was difficult to remount a horse in the heat of battle.³³ This is not surprising when one reads what is perhaps the best-known and most comprehensive description of mid-10th century Arab cavalry in this area.³⁴ Here the Banu Ḥabīb, who deserted their Ḥamdānid cousins and rivals to cross into Byzantine territory, consisted of horsemen armed with swords and khattī lances, wearing dir^c hauberks, gilded lawshan cuirasses and brocade-covered miḡfar coifs. These or other Arab troops became important enough to feature in the official lists of Byzantine forces.³⁵

Arabs and Turkish ghulāms were not, of course, the only Muslim troops operating on Byzantium's eastern frontier. Kurds were, in the 10th and 11th centuries, reasserting their separate existence when they established some local dynasties. Kurds were also recruited as cavalry by various Persian courts to the east, while in the west they appear most frequently as sword-armed horsemen.³⁶ During wars against the Ḥamdānids' ʿUqaylid Arab vassals in the late 10th century, Kurdish cavalry wore heavier armour than their foes and rode slower, heavier, presumably Persian horses.³⁷ Such a style of sword-armed heavy cavalry would remain fashionable in this area at least until the end of the 11th century, and perhaps longer, by which time Kurds were also serving in

33. Miskawaihi, op. cit., vol. II, p. 336.

34. Ibn Ḥawqal, "Kitāb al Masālik wa'l Mamālik," in Sayf al Dawla, recueil de textes, m. Canard edit. and trans., (Algiers 1934), pp. 211-212.

35. Blondal and Beneditz, op. cit., p. 82.

36. V. Minorsky, "New light on the Shaddādids of Ganja," in Studies in Caucasian History, (London 1953), pp. 10-11 and 19-20.

37. Miskawaihi, op. cit., vol. III, p. 144.

Fāṭimid Egypt.³⁸ At this early date very little Muslim art is available from the mountains of Armenia. Christian representations might, however, shed light on Kurdish cavalry which, like ^{that of} its Arab neighbours to the south, was probably similar to its Christian rivals (Figs. 240 and 241). Such Armenian art portrays a variety of equipment and styles of cavalry combat, although unfortunately the most interesting figure representing Goliath, and the one most likely to illustrate "enemy" armour, is on foot. Note how similar this warrior's mixed lamellar, mail and perhaps even laminated armour is to that of the more crudely represented Philistines on the similarly dated Byzantine ivory box from Sens Cathedral (Fig. 209).

The military impact of Alptegin's free-booting ghulāms in Syria has already been mentioned, both in relation to the Byzantines and the Fāṭimids. In combat with the latter, these Turks were at first unable to break the ranks of Berber infantry who were either in or near the fortifications of Sidon.³⁹ When the Berbers pursued the ghulam force, however, they were ridden down by their sword-and mace-wielding foes when the latter suddenly turned upon them near a river.⁴⁰ In many ways this minor battle was astonishingly similar to another fought at Hastings, ninety years later and almost three thousand kilometres away, between heavy Norman cavalry and Anglo-Saxon infantry. Again, however, there is virtually no pictorial evidence from Syria at this time. One exception is a fragment of supposedly 10th or 11th century

38. Canard, "La Procession du Nouvel An chez les Fāṭimides," pp. 392-393.

39. Ibn al Qalānisi, op. cit., p. 15.

40. Ibid.



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pottery that shows the "rigid noseband" style of bridle that was a distinctly Iranian fashion at this time (Fig. 277). Perhaps *this style* was brought to Syria by ex-^CAbbāsid ghulāms.

Of course, Turkish ghulāms had served as far west as Egypt for many years, as had Khurāsānīs and other Iranians. Ibn Ṭūlūn reportedly recruited some twenty-four thousand ghulāms. The Ikhshīdids did likewise, and in fact it was the unpaid ghulāms of the last Ikhshīdid governor who invited the Fāṭimids to invade Egypt, thereafter serving these new rulers, while Alptegin and his Damascus ghulāms also entered Fāṭimid service a while later. In the 9th and 10th centuries a distinctive style of Coptic manuscript illustration appeared which might show the equipment of such cavalry in pre-Fāṭimid Egypt (Figs. 143 and 145). Here a horseman's equipment has lost almost all connection with any Byzantine original. Most such warriors have their swords slung on their backs, which could be an Egyptian tradition (Fig. 14). They also carry long spears, sometimes with broad or long blades that recall Umayyad sources (Fig. 122), have axes in belts (Fig. 145) and bows and arrows either on their backs like infantry (Fig. 145) or on their saddles (Fig. 143) like pre-Islamic Syrian horse-archers.

Such an emphasis on heavy cavalry in Syria and Egypt during the break-up of the ^CAbbāsid Caliphate did not mean that light cavalry ceased to exist. Indeed, the increasing political confusion and, in all probability, a consequent breakdown in arms-manufacturing capability seem eventually to have led to a revival of light cavalry in many areas. The first Ṭūlūnid governor of Egypt employed a relatively small number of unspecified Arab troops. On the other hand his son, the fabulously wealthy Khumārawayh ibn Aḥmad, selected his personal guard from the warlike Hawf bedouin of the eastern

Delta area. These appear to have been light cavalry, as opposed to Khumārawayh's second guard unit of heavily armoured negro infantry.⁴¹

The collapse of the Hamdānids in northern Syria led to even greater confusion than had the earlier decline of central ʿAbbāsīd authority. Yet within two decades another Arab dynasty seized control of this area. These Mirdāsids seem to have had more immediate bedouin origins than had their Hamdānid predecessors. Although they too were patrons of literature, the army that their poets extolled was more obviously bedouin than was that of the Hamdānids. It was effective enough, however, and defeated a sizeable Byzantine force near Antioch in 1030 AD. In this conflict the Mirdāsids used basic bedouin karr wa farr tactics and small groups of light cavalry, many of whom apparently still did not employ stirrups.⁴² Such Arab bedouin horsemen, described by Michael Psellus as "daring bare-back riders,"⁴³ would make a similar impact in Ghaznawid eastern Iran where they were known as dīw suwārān or "dare-devil riders."⁴⁴ It might not be a coincidence that towards the end of the 11th century the Byzantine army also contained little or no domestically recruited heavy cavalry.⁴⁵ Perhaps one reason for their decline was the lack of an obvious opponent, at least before the Saljūqs appeared on Byzantium's eastern frontier.

Less surprisingly, cavalry had failed to develop to any great extent in southern Arabia during the Caliphate. Here most

41. Hassan, op. cit., pp. 167-168 and 170-171.

42. Psellus, op. cit., p. 68.

43. Ibid.

44. Bosworth, The Ghaznavids, pp. 111-112.

45. Chalandon, Les Comnènes - Études sur l'Empire Byzantin, p. 279.

warfare had remained internal since the Muslim conquest, and traditional Arab infantry tactics using darraqah shield, rumh lance and qaws bow remained standard at least until the 10th century.⁴⁶

The decline of ^CAbbāsid power in the east of Islam in the mid-9th century similarly led to the establishment of independent states. Of course, various governors had already established dynasties in this area, including the Dulayfids of Kurdistān and the Tāhirids of Khurāsān. They, however, had remained servants of the central government in Baghdād. After the middle of the 9th century things changed, with the ^CAlids of Tabaristān, the Saffārids of eastern Persia and the Sāmānids of Khurāsān either denying ^CAbbāsid suzerainty, accepting it only occasionally or finding it so remote as to have little effect on their own dynastic power.

Not much is known about ^CAlid military organization, which was probably based upon the famed infantry of the south Caspian mountains. The army of the Saffārids was, however, one of the first in which native Persian cavalry traditions reasserted themselves in their own right. The founder of this dynasty had himself risen to prominence as one of the local muttawī'ah mixed cavalry and infantry volunteer forces of Sīstān. Recruited from largely Persian frontier warriors, retired or redundant soldiers and peasants seeking to improve their lot, these muttawī'ah formed the backbone of the first Saffārid army.⁴⁷ Military success and consequent booty enabled the Saffārids to convert more of their soldiers into cavalry, and to recruit Arab and Indian mercenaries.

46. Al Hamdānī, Al Iklīl, vol. VIII, pp. 42 and 46-47.

47. Bosworth, "The Armies of the Saffārids," pp. 538-540.

The evidence of later 10th century literature from eastern Iran suggests, however, that local Arab tribes, having preserved their identity, had declined in military value and were poorly equipped.⁴⁸ Later chroniclers also state that Ṣaffārīd cavalry armies relied primarily on the lance,⁴⁹ and were thus much the same as Caliphal forces though lacking heavily armoured ghulam horse-archers.

Our one possible pictorial source from eastern Iran at the time of the Ṣaffārīds might, in fact, have come from Sind which did not fall to this dynasty, although it could also have originated in central Afghānistān where the Ṣaffārīds did establish the first effective Muslim rule. It is a large ivory chess-piece and while it is very Indian in style (Fig. 487), the cavalry along its sides wield swords rather than spears and have equipment that generally shows a distinct revival of Iranian tradition.

Such a revival was even more pronounced, and certainly more self-conscious, in the subsequent Ṣamānīd dynasty which, from its power-base in Mā Warā' al Nahr, conquered most of eastern Islam in the 10th century. Ṣamānīd armies are probably described in detail in Firdawsī's Shāhnāmāh for although the elements of this story are clearly pre-Islamic, details of military equipment, organization and tactics are likely to be those of the era in which its author lived.

Apparently a young nobleman was trained not only to ride, but also to use the lasso and bow.⁵⁰ Full equipment frequently varied, but might include zirih hauberk, khaftan which was probably

48. Firdawsī, The Epic of the Kings - Shahnama, R. Levy trans., (London 1967), p. 354.

49. Minhāj al Dīn, op. cit., p. 25.

50. Firdawsī, op. cit., p. 528.

a padded gambeson, tark rūmī or helmet of presumed Byzantine style, lance, lasso, bow and qurẓ mace.⁵¹ Combat styles between such cavalry remained much as they had been in previous centuries, first using lances, then swords, then maces.⁵² It was also made very clear that reins were slackened while knees and stirrups were tightened as a horseman made his attack.⁵³ These, rather than the saddle as in Europe's later couched-lance style of combat, clearly took the strain of impact.⁵⁴ The Sāmānid battle-array, as portrayed in the Shāhnāmāh, similarly remained within the traditions of pre-Islamic Iran and the Caliphate. In front stood ranks of infantry with nīẓah spears that were used as pikes. Behind them were ranged more infantry wearing jawshen cuirasses, some throwing qurẓ javelins with long iron blades while others shot with the bow. Cavalry was drawn up to the rear and were armed with khanjars. Although not mentioned in this particular extract, they probably carried longer swords as well. War elephants apparently brought up the rear if they were being employed.⁵⁵

Heavy cavalry of the Turkish ghulām type almost certainly played a dominant role in Sāmānid armies as shown in these sources. Horse-armour, known as barqustuwān and probably similar if not identical to the Arab tiḡfāf,⁵⁶ frequently crops up in Firdawsī's

51. Ibid., p. 485.

52. Ibid., p. 429.

53. Ibid., p. 64.

54. Ibid., p. 86.

55. Ibid., p. 1156.

56. Divar, "Cavalry Equipment and Tactics on the Euphrates Frontier," p. 291.

Shāhnāmāh.⁵⁷ Sometimes it is specifically described as being made of mail,⁵⁸ but elsewhere could well have been of felt and was easily severed by a sword-blow⁵⁹ or pierced with an arrow.⁶⁰ Such cumbersome horse-armour could also be cut loose and abandoned, thus enabling a rider to outstrip his pursuers.⁶¹

Sāmānid heavy cavalry otherwise wore zirih mail, lawshan cuirass, and a variety of other more obscure items of armour. All these may well appear in Sāmānid art, with the exception of horse-armour, for only one doubtful representation of a baroustuwān survives from the 9th or 10th centuries (Fig. 447). Otherwise the cavalry of Sāmānid Iran would all seem to have been heavy, though varied in their armours of mail, scale, lamellar and perhaps felt or quilt (Figs. 346-350 and 447). Even when not armoured, their equipment, belt and swords put them in the same tradition as that of ^CAbbāsīd Iraq (Figs. 356 and 357). Similar weaponry and heavy armour was apparently used by some foot soldiers, if these pictures do not show dismounted cavalry (Figs. 345, 351, 355 and 448). The javelin-men mentioned by Firdawsī also appear (Fig. 354).

Much the same traditional troops, ghulams and indigenous Iranian or Tājik cavalry, formed the core of the Ghaznawid army in eastern Iran in the 11th and early 12th centuries (Fig. 365). Here there was perhaps a slightly greater emphasis on heavy horse-archery, in addition to the mace (Fig. 364), sword including the

57. Firdawsī, op. cit., pp. 23, 296, 958 and 1146.

58. Ibid., pp. 106 and 489.

59. Ibid., pp. 427 and 819.

60. Ibid., pp. 1222-1223.

61. Firdawsī, Levy trans., op. cit., p. 362.



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curved galāchūr, and tirād short cavalry spear or javelin.⁶²

Although horse-armour is apparently not mentioned in the Ghaznawid east, it clearly survived in western Iran where it later reappears in art. The Ghaznawids of course recruited Kurdish heavy cavalry from just this area. Arab lighter cavalry were, as already mentioned, similarly employed by the Ghaznawids.⁶³

In western Iran the Būyid dynasty held sway during the late 10th and early 11th centuries. Although their power originally rested on Daylamī infantry, they soon recruited a balancing force of Turkish mamlūka, Kurds, Arabs, Persians and Balūchīs, the bulk of whom seem to have been cavalry.⁶⁴ What little we can learn from pictorial sources would suggest that their equipment was comparable to that of the Sāmānid east and the preceding decades of Abbāsīd Iraq (Fig. 359).

Certainly heavy cavalry, in particular those fighting with the sword and riding armoured horses, remained an effective force in the north-west of Iran. Here in the Caucasus many earlier traditions survived, some of them clearly pre-Islamic, and although the peoples of this area did not make much political impact, they fought for and against various conquerors who passed across their territories. As such they occasionally emerge in unexpected sources, for example the Gesta Francorum chronicle of the First Crusade. This states that during the battle of Dorylaeum in 1097 AD the Turkish army contained a number of Agulani who were, in all probability, Caucasian Albanians or Aghovanians from northern

62. Bosworth, The Ghaznavids, pp. 107-108.

63. Ibid., pp. 111-112.

64. Bosworth, "Military Organization under the Būyids of Persia and Iraq," pp. 145, 150, 153 and 162.

Azarbāyjān. They fought only with swords, wore iron scale or lamellar armour and rode horses with similarly constructed bards.⁶⁵ Some of their equipment may well be reflected in the art of their neighbours and cultural cousins, the Georgians (Figs. 413, 414 and 416-418). If such was the case, then the armour of these Aghovanians would have been of scale and not of lamellar and thus typical of that major Caucasian arms-producing region widely known as Kubachi.

It would, however, be quite misleading to see the developing role of heavy cavalry in Byzantium and Islam in isolation. Clearly such troops evolved with the threat of Central Asian Turkish nomadic horse-archery very much in mind. Other peoples north of the Eurasian steppes experienced a similar evolution in their cavalry, while various semi-settled states within the steppe area saw a comparable rise in the importance of heavy cavalry.

To the north, in Kievan Russia, Slav^{onic} cavalry first appeared in the 10th century and continued to reflect the styles of nomadic and semi-nomadic peoples to the south and east for another hundred years. This was particularly noticeable in their horse-furniture, full mail hauberks, scale and lamellar armours and, above all, in helmets.⁶⁶ Some Soviet scholars do, however, lay greater emphasis on the similarities between Russian cavalry and its European contemporaries.⁶⁷ Even the tactics employed, with bows being used from the saddle as horsemen approached their foes,

65. Anon., The Deeds of the Franks and other Pilgrims to Jerusalem, R. Hill trans., (London 1962), p. 49.

66. Kirpichnikoff, The Equipment of Rider and Horse in Russia from the 9th to 13th centuries, pp. 138-139; Kirpichnikoff, Medieval Russian Arms, pp. 90-91.

67. Goreslick, "Bronya Praotecheskaya," p. 64.

spears held for the initial shock in ordered ranks, and swords, axes, maces and various other close-combat weapons being drawn in the subsequent mêlée,⁶⁸ parallel traditions south of the Eurasian steppe-lands. Surviving arms and armour from the 10th and 11th century Muslim world are extremely rare, but Russia is, by contrast, exceptionally rich in such artifacts. Helmets alone from Kievan Russia show an astonishing variety of types (Figs. 614-618). These not only illustrate what a melting pot of traditions Kiev had become, but may also shed light on comparable situations to the south in Islam. This latter area was, of course, in very close commercial and cultural contact with Kievan Russia in the 10th century. The development of Kievan cavalry was also mirrored in the art of the area (Fig. 623).

Among the true nomads heavy cavalry equipped for close combat were not unknown, though they probably remained a minority, perhaps forming élite guard units for the khan of the tribe or people. In the late 9th and early 10th centuries the Byzantine Emperor Leo VI made it clear that such an élite also used horse-armour of the originally Avar style that protected only the forequarters of the horse,⁶⁹ while the bulk of such nomad Turkish cavalry fought both with the lance and bow.⁷⁰ During the 10th century the Turkish Pechenegs clearly had such a corps of heavier sword-armed cavalry whose responsibility it was to make a final decisive charge after light horse-archers had exhausted the foe.⁷¹ According to Michael Psellus in the mid-11th century, however, these Pechenegs

68. Kirpitchnikoff, Medieval Russian Arms, loc. cit.

69. Leo VI, op. cit., Inst. XVIII.

70. Ibid.

71. Mas'ūdī, op. cit., vol. II, pp. 61-62.

fought only with spears and wore neither armour nor helmets.⁷² Some exceptionally fine specimens of helmets found in Pecheneg grave sites (Figs. 621 and 624) would nevertheless indicate that al Mas'ūdī's earlier account was the more accurate.

Further south, and in closer cultural contact with Islam, were the semi-settled Turco-Jewish Khazars. Their heavy cavalry had been recorded as early as the 8th century, while by the 10th they had been reinforced by Muslim refugees from Khwarizm. These latter warriors included heavy horse-archers wearing jawshan cuirasses, khūd helmets and dir^C hauberks in the Transoxanian or Khurāsānī tradition. Others who fought with rumh lances were described, somewhat unhelpfully, as equipped with normal Muslim war gear.⁷³

The collapse of ^CAbbāsīd authority in the central Muslim lands merely led to a devolution of political and military power, while in the eastern lands there was a pronounced revival of indigenous traditions. In the west, however, the ^CAbbāsīd collapse had a more complicated result. Here there was no very immediate revival of indigenous Berber military institutions for these still seem to have been relatively backward. Rather, the political changes led to a revival of those Arab tactics and troops that had elsewhere been relegated either to the frontiers or to a distinctly second-class status. For example, among the earliest regular troops to fight for the Fāṭimid Caliphs was the jund of Qayrawān, although the Berber Kitama tribe were this dynasty's first military adherents in the early 10th century.⁷⁴ Such Berber

72. Psellus, op. cit., p. 318.

73. Mas'ūdī, op. cit., vol. II, pp. 10-11.

74. Levy, An Introduction to the Sociology of Islam, pp. 323-324.

warriors continued to form the majority of early Fāṭimid armies for some time. The Arab and Arabized Berber élites of Sicily also contributed to Fāṭimid power once that island had been subjected to the new shīʿī Caliphate. In Sicily almost every able-bodied Muslim had military obligations although mercenaries formed the hard core of Sicilian forces. As such the island's military organization was closer to that of eastern Islam than to Muslim al Andalus with its quasi-feudal structure.⁷⁵

Very little is known about the military equipment of Islamic Sicily, but light troops seem to have predominated in both cavalry and infantry, although basic mail hauberks were not uncommon.⁷⁶ Later Muslim art under the Normans could show that the mace was still popular among Muslim warriors. It had already appeared in those southern Italian sources that were under strong Islamic influence (Figs. 559 and 567). The mace would, in fact, seem to have been characteristically Arab. It was also a weapon designed to deal with armoured foes, as a helmet or bone breaker. It was not recorded in use by those Berbers who bore the brunt of Fāṭimid expansionist wars.

Apart from spear and sword, these Berbers still made wide use of the javelin.⁷⁷ They also soon proved unable to stand against heavy Turkish ghulām cavalry. Nevertheless, they continued to play an important military role until, during their alliance with negro troops, they were defeated by a rival association of Daylemīs, Turks and at the end Armenians during Fāṭimid civil wars in the mid-11th century. Other Berbers, such as the Barqīya

75. Gabrieli, "Gli Arabi in Spagna e in Italia," p. 717.

76. Ibid., p. 718.

77. Beshir, op. cit., pp. 67-70.



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from Libya and the Bāṭilis cavalry from the further Maḡhrib, seem to have lasted rather longer.⁷⁸ One interesting illustration of such spear-armed light cavalry appears on an Egyptian papyrus and might indicate that some North African horsemen still rode bareback (Fig. 147). Elsewhere, Nubian frescoes from around 1000 AD make it very clear that while stirrups were used, they were not universal (Fig. 188).

Perhaps it was a lack of heavy cavalry that limited Berber horsemen to a secondary role even in early Fāṭimid forces, a role that recalls the situation in the first Muslim armies of the 7th century. Some Berbers had adopted Arab horses and Arab bows by the late 9th century,⁷⁹ but equally clearly the nomad tribes of the Sahara possessed few horses even in the mid-11th century.⁸⁰ Among wealthier horse-raising tribes such as the Sanhāja, who could field a respectably mixed cavalry and infantry army, only a minority would seem to have been armoured in a style developed by later Fāṭimid forces.⁸¹ In all these armies, including the Fāṭimid, an earlier version of that tactical cooperation between infantry and cavalry which characterized all Muslim warfare still prevailed. One Berber variation might, however, have been an initial infantry charge covered by cavalry, unlike the general Arab preference for awaiting an enemy attack. Even in attack,

78. Ibid., pp. 27-34.

79. Ibn al Faqīh al Hamadhānī, "Kitāb al Buldān," in Description du Maḡhreb et de l'Europe au IIIe-IXe siècle, M. Hadj-Sadok edit. and trans., (Algiers 1949), pp. 40-41.

80. Moraes Farias, op. cit., pp. 810-811.

81. Brett, "The Military Interest of the Battle of Haydaran," pp. 84-85.

however, Fāṭimid and other Berber cavalry were limited to protecting those infantry on whom the outcome of a battle entirely depended.⁸²

So vital was the role of infantry in Fāṭimid times that the palace's military schools, or hujra, seemed to concentrate as much upon infantry skills as upon the more prestigious cavalry training.⁸³

Among such small and perhaps very mixed early Fāṭimid cavalry forces there may have been some Nubians, for the kingdom of Alwāh around present-day Khartūm was famed for its horses in the 10th century. Horsemen certainly appear in Nubian art, and are portrayed in such detail that their artists would seem to have known their subjects well (Figs. 183, 184 and 187-189). Turkish ghulām cavalry, both those inherited from the previous Ikhshīdīd governors and those recruited in Syria, clearly had a profound and rapid effect on Fāṭimid military thinking. They may also have had an impact on the art of Fāṭimid and North Africa. Here the moon-faced ideal of Turkish beauty is ^{clearly} contrasted with the bearded Berber or Arab. The former, Turk, is normally on horseback or in obvious cavalry gear, while the latter, Berber or Arab, is on foot or at least equipped in a very different style (Figs. 157 and 195).

These ghulāms must have influenced those non-Turkish cavalry serving the Fāṭimid state. In 991 AD, less than twenty years after Alptegin's ghulāms rode down the Fāṭimid infantry near Sidon, heavy Fāṭimid cavalry were described as wearing hauberks and helmets, and riding horses protected by tijfāf bards.⁸⁴

82. Beshir, op. cit., pp. 76-79.

83. Ibid., pp. 63-67.

84. Ibid., p. 71.

Half a century later, in the annual parade to "cut the dam" and start the irrigation of Lower Egypt, almost every cavalry horse was so protected.⁸⁵ Of course, one may assume that élite troops took part in such a ceremonial occasion, and that the bulk of Egypt's cavalry were not so well equipped.

Although no such bards appear in Egyptian art of the period, one somewhat isolated piece of horse-armour is shown. It is a chamfron worn by the horse of an 11th century Coptic warrior saint (Fig. 151). Armour for the rider is, however, increasingly illustrated from the 10th to mid-12th centuries. It ranges from the simple qarqal quilted hauberk or perhaps mail-lined kazarqhand (Fig. 187), through the scale hauberk (Fig. 189) and full mail hauberk of a style almost identical to that worn by the Fāṭimids' early Crusader foes (Fig. 161), to a more complicated long-sleeved lamellar or vertically linked-scale hauberk again worn over mail (Fig. 146). Such varied Muslim armours, whether worn by Fāṭimid or Saljūq heavy cavalry, were clearly noted by the Crusaders. Their reports, and perhaps even the sketches of those clerks among their ranks, probably provided basic material for the sadly now lost windows of St. Denis Cathedral in Paris. Here many "infidels" were shown wearing long mail hauberks identical to those worn almost universally by the Crusaders, while others wore different equipment that included variously shaped helmets, long and short scale hauberks, probably quilted armours and ill-drawn lamellar (Fig. 580).

Such an increase in cavalry armour perhaps partially accounted for the abandonment of the javelin by Fāṭimid cavalry in the late 11th and 12th centuries. Such a process had already occurred

85. Ibid., pp. 67-70.

in western Europe and was recorded in Jean de Meun's L'Art de Chevalerie of 1284 AD.⁸⁶ The equipment of the last, and perhaps most thoroughly armoured, Fāṭimid cavalry was best described in a poem by the vizier Ḥalā'ī^c in 1155 AD. Here the men wore dir^c and jubbah hauberks and were armed with swords and long European or North African style qanāḥ lances.⁸⁷

As already mentioned, the aristocratic élite of those Berber tribes who took control of the Maḡrib from a shrinking Fāṭimid Caliphate in the late 10th and 11th centuries could field small armoured cavalry units. Those of Morocco will appear later in an Iberian context, but perhaps the best known came from the Ṣanhāja tribe, founders of the Zīrid dynasty in Ifrīqiya and Sicily. Here armoured horsemen formed an élite within Zīrid cavalry forces, comparable to and clearly acting in cooperation with a heavy infantry force of probably negro mamlūks known as ḥabīd.⁸⁸

Subsequent centuries of chaos and decline, plus an apparent lack of archaeological interest in the Islamic era, means that little pictorial information is available from the 10th to 11th centuries in North Africa. One fragmented relief does, however, suggest that a tall and very flared cavalry saddle of almost European style was known in the Maḡrib (Fig. 195). A few recently published 10th or 11th century ceramic fragments from Tunisia illustrate what might be mailed warriors (Figs. 675 and 676), in one case wielding a spear and a small hand-held buckler and riding

86. F. Buttin, "La lance et l'arrêt de cuirasse," Archaeologia, XCIX (1965), pp. 79-80.

87. Ghaith, op. cit., p. 92.

88. Brett, op. cit., pp. 82-85.

a possibly caparisoned horse. This particular warrior could also be interpreted as wearing a sleeveless mail jerkin similar to that seen on Nīshāpūr ceramics of the previous century (Fig. 352) and on Italian sources of a somewhat later date (Figs. 568, 599 and 609 I).

For fuller details we must, in fact, cross the water to Sicily and even to southern Italy. Here the Normans encouraged Islamic art and artistic influences to flourish in the late 11th and 12th centuries, which provide excellent illustrations, not only of Norman and other Christian warriors, but also of those Muslim troops who long provided the military backbone of the Norman kingdom. The most unmistakable are those to be seen on the panels of the Cappella Palatina ceiling in Palermo (Figs. 604 A, B, H and I). Other horsemen from this same source are only assumed to be Muslims because they wear the tirāz on their armoured sleeves (Fig. 604 C). Earlier, and more specifically Muslim, art also shows armoured figures, largely on foot though with mail hauberks that could equally well have served a horseman (Fig. 601). Other distinctly non-Norman troops from this area appear as chess-men (Fig. 597). They need not be Muslims, of course, for there is every reason to suppose that the indigenous warriors of southern Italy had more in common with Islamic and Byzantine military traditions than with those of their Norman conquerors. Such mixed military styles are also shown on the early 12th century carvings of San Nicola di Bari in Apulia where some "enemy" warriors look, not surprisingly, very Muslim (Figs. 576 and 577).

Light cavalry still, however, seem to have predominated among the Muslim horsemen of North Africa. This became even more apparent after the invasion of the Banū Hilāl in the mid-11th



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century. Bedouin warriors from Egypt and Syria had long been employed by the Fāṭimids of Cairo as mobile light cavalry auxiliaries, armed primarily with their traditional spears.⁸⁹ They seem to have been effective and well-trained troops, though lightly armed, and were used to garrison whole provinces from the Nile Delta to Tripolitania.⁹⁰ Such Arab, or perhaps Berber, cavalry appear frequently in surviving art, ranging from the sophisticated productions of Fāṭimid Cairo (Figs. 152, 153 and 160), through the crude provincial work of Ifrīqiya (Fig. 194) to the Saracenic art of Norman Sicily and Italy. In this latter area they are occasionally portrayed as allies of heavier European cavalry (Figs. 566, 604J, 604L and 604 O).

Such all-too-often predatory and troublesome bedouin warriors seem to have been encouraged to migrate westward out of Egypt in the 11th century. Even so, their fighting numbers appear to have been small.⁹¹ Equally, the size of Fāṭimid armies, at least in the late 11th and 12th centuries, remained relatively small despite the exaggerated and tendentious reports sent back to an eager Europe by various Crusader chroniclers. The Fāṭimid Caliphate, though undeniably wealthy, could not constantly recruit new troops to fill those ranks decimated by an endless series of Crusader victories. Such troops were simply not available. Of course, the defeat of a medieval army rarely meant the destruction of all or even most of its men. Generally it was a case of disruption and dispersion, followed by intensive but localized carnage. Nevertheless, the loss of Berber territories in the

89. Beshir, op. cit., p. 52.

90. Brett, op. cit., pp. 86-87.

91. Ibid., p. 88.

Maghrib, and the drying up of eastern recruitment following the Saljūq conquests of Iran, Iraq and Syria, meant a serious loss of military manpower. It could not be easily compensated for by increased Fāṭimid enlistment of Armenians and negro slave-troops, nor by the encouragement of ahdath urban militias in Syria or even by the militarization of the Egyptian hamūlāh labour corps. It was, in fact, a lack of troops that to a large extent led the Fāṭimids to rely so heavily on naval power. Such a strategy enabled them, if they controlled the seas, to transfer small numbers of well-equipped troops to threatened areas at relatively short notice.⁹²

92. Beshir, op. cit., pp. 27-28 and passim.

CHAPTER 6

THE CONTINUED IMPORTANCE OF TRAINED INFANTRY

Infantry continued to serve in almost all Muslim forces from the 7th to 13th centuries. Yet this had been true of most armies since war began. Even the nomads of Central Asia had some foot soldiers amongst them, even if they were only poverty-stricken tribesmen who could not afford a horse. Such criteria would oblige one to term any individual who seized a weapon, but did not possess a horse, as an infantryman. Within the world of Islam, however, professional infantry forces of men skilled in specific military tasks continued to play an important, though fluctuating, role despite the increasing importance of cavalry in most regions.

As such, these troops should be distinguished from tribal levies of backward peoples such as the Berbers who, in the early 8th century, fought virtually naked armed only with slings,¹ or those peaceful peasantry of ^CAbbāsīd Āzərbayjān who would also fight with slings, should the need arise.² The local volunteer mutṭawī'ah who fought on many fronts against various infidels, heretics or pagans, often only for a limited period, should similarly be disregarded. Their duties could be wide-ranging, and included keeping order or collecting taxes.³ They could, however, also be

1. Ibn ^CAbd al Ḥakam, op. cit., p. 129.

2. Minorsky, Studies in Caucasian History, p. 112.

3. H. Kennedy, "The Early Islamic City: Self Government or State Control?" during Colloquium on the Early Medieval City, (Univ. of Edinburgh, Dept. of Extra-Mural Studies, 6th May 1978).

a source of rebellion if their religious sensibilities were offended by an insufficiently pious local governor.⁴ Such warriors would continue to play their part in the armies of Islam, particularly against the Crusades of the 12th and 13th centuries.

The same might be said of part-time city militias, known as ahdāth.⁵ The origins of such forces are obscure, although they might have emerged from a mingling of various urban military or volunteer elements, including troublesome gangs based upon the quarters of a town. Their military duties were normally to defend their city and although they included some horsemen, the majority fought on foot. First appearing in the Jazīra and Iraq in the 9th century, they could have shared the same origins as the ḥurāt of Baghdād. These latter consisted of a city mob and although they fought with desperation and even some success against the Khurāsānīs of al Ma'mūn, they were quite distinct from the professional abnā' and harbiyah troops in Baghdād.⁶ Unlike the later ahdāth who seem to have possessed proper, if assorted arms and armour, these ḥurāt used home-made shields, helmets and slings that seem to recall Sassanian or even ancient Babylonian traditions.⁷

Such ahdāth militias were also important in Syria from the 10th to 12th centuries where their development was greatly encouraged by the Fāṭimids in the face of Byzantine expansion.⁸ Many such

4. Bosworth, "The Armies of the Ṣaffārids," p. 538.

5. Cahen, "Djaysh," pp. 504-509.

6. Ayalon, "The Military Reforms of Caliph al Mu'tasim," pp. 11-12.

7. Al Mas'ūdī, op. cit., vol. VI, pp. 452-453, 461-462 and 470.

8. Beshir, op. cit., p. 53.

warriors probably broadened their military experience by participating in annual raids against Byzantium.⁹ The Syrian ahdāth was still important when the First Crusade appeared on the scene at the end of the 11th century,¹⁰ and remained so during much of the Crusading era. At this time they might have merged with, or been referred to as, remnants of the earlier jund structure.¹¹ Perhaps we have an impression of these ill-equipped 12th century local militias in one of the earliest surviving Syriac Gospels (Fig. 128).

Such local, non-professional or part-time, troops survived in other provinces including Egypt. Here a local Muslim shurṭa or police force played a prominent role in late Umayyad and early ʿAbbāsid times, but appears to have declined as Turkish ghulāms took over most military responsibilities.¹² Even under the Ṭūlūnids, however, local levies probably played some part,¹³ and, as already mentioned, the Fāṭimids once tried to solve their lack of troops by arming the hawwālāh labour corps. During the Crusades, mutṭawīʿah volunteers came from Egypt, as they did from other parts of Ṣalāḥ al Dīn's empire.¹⁴ (Figs. 150 and 156), although by contrast many Egyptian cities, unlike those of Syria, do not appear to have had their own ahdāth.¹⁵

9. Leo VI, op. cit., Inst. XVIII.

10. C. Cahen, La Syrie du Nord au Temps des Croisades, (Paris 1940), p. 195.

11. Ibn al Qalānīsī, passim; H. A. R. Gibb, "The Armies of Saladin," Cahiers d'Histoire Egyptienne, III (1951), pp. 304-320.

12. Kennedy, loc. cit.

13. Hassan, op. cit., p. 167.

14. Gibb, "The Armies of Saladin," loc. cit.

15. Ibn al Athīr, "Al Kāmil fī 'l Ta'rīkh," in Arab Historians of the Crusades, F. Gabrieli trans., (London 1969), p. 259.

Where professional infantry were concerned, they were generally recruited on an ethnic basis. At first, of course, the most important such groups were the Arabs themselves. During Umayyad and early ^CAbbāsid times, as already stated, cavalry grew both in importance and in numbers. Yet they generally still fought in strict cooperation with the infantry. By the late 7th century, for example, one notably rich Arab tribe could still only field half as many armoured cavalry as it could infantry.¹⁶ At first tactics were simple, as they had been under the Rāshidūn Caliphs. Any armoured men (Figs. 122, 123 and 340) stood in the front ranks, usually kneeling behind their shields with rumh spears. These were supported by archers (Fig. 127) or men with harbah short spears or javelins. All, apparently, also carried swords (Fig. 141).¹⁷

The close-packed, solid ranks of the early days proved ineffective against the fast-moving, but similarly Arab, Khārijīs and hence Marwān II introduced his famous reforms¹⁸ by breaking up the old five divisions, or khamis, of van, rear, centre and two wings, into smaller kardus squadrons. These could act in closer cooperation with cavalry. In many cases, throughout the Umayyad era, the lightly armed infantry archers (Fig. 122) seem to have been considered as a separate unit, perhaps to be moved around a battlefield in support of those among the more heavily armoured spear-carrying infantry who were under the greatest enemy pressure.¹⁹ Others could also be spread about as skirmishers.

16. Al Mas'ūdī, op. cit., vol.V, p. 140.

17. Al Tabarī, op. cit., vol.II, pp. 58, 337, 411, 520, 790, 852, 889 and 959.

18. Moraes Farias, op. cit., p. 812.

19. Al Tabarī, op. cit., vol.II, pp. 344, 1551 and 1708.

Maces of various types (Fig. 115) might also have been used by the infantry, particularly against heavily armoured enemy troops kneeling in ranks behind their shields and with their spears held as pikes.²⁰

An echo of these Umayyad tactics may be heard in the traditional battle-array of the kings of Himyar or Yemen. Here a screen of "scouts" preceded an almost entirely infantry army, itself led by a front line of élite troops. Very small groups of horsemen protected the wings, and then only from some distance to the rear.²¹

Early ^CAbbāsīd infantry tactics and equipment continued in this same Umayyad tradition. Harbīyah heavy infantry with spears, swords and shields, and rāmiyah archers with bows, swords and shields, were soon joined by a small specialist corps of naffatīn. These men used Greek Fire projectors and grenades, both in open battle and in sieges. Yet the tactics remained exactly the same, even in the early 9th century,²² and during regular Muslim incursions on to the Anatolian plateau infantry remained vital. If it were a small raid, then such infantry would protect their cavalry as it passed through the mountains and then perhaps remain in the passes to guard a line of retreat. If it were a major assault, however, the aim would be to find and destroy the Byzantine army. In such a task infantry played a leading role.²³

20. Ibid., vol.II, pp. 712, 912, 917, 927, 966, 1889 and 1927-1928.

21. Mubārakshāh, op. cit., p. 325.

22. Levy, The Social Structure of Islam, pp. 432-433; Leo VI, loc. cit.

23. Howard-Johnson, op. cit., pp. 225-226.

The most detailed information that is available concerns what might have been the most prestigious corps in the ^CAbbāsīd army. These abnā' were the senior element in Baghdād's resident ahl Baghdād or jund al Baghdād.²⁴ As mentioned earlier, they may have been descended from those Khurāsānīs who took part in the original ^CAbbāsīd revolution. Their equipment is unlikely to have differed much from other ^CAbbāsīd infantry, whether in the capital or garrisoning other major cities. Not only were they renowned in siege and counter-siege, but also in close country and mountains.²⁵ Abnā' were also trained to maintain ranks with their long qanāh spears and broad swords, however hard the enemy pressed them, and then to fight hand-to-hand with khanjar short swords and sikīnah daggers. In attack they used the same weapons, although the mitrād short spear or javelin seems to have replaced the long qanāh. The camūd mace seems also to have been added. Such troops were to be recognized by their long beards and imāmāh turbans.²⁶ Although abnā' were clearly often armoured, they would also fight without cuirass or even shield, while their ranks similarly included a number of infantry archers.²⁷

Although the abnā' and other non-Turkish, non-ghulām, troops of Baghdād declined in importance during the 9th and 10th centuries, there is little reason to suppose that they disappeared entirely. Indeed those "picked shield-bearing warriors of Baghdād" mentioned by Fidausī may have been their descendants. These latter infantry

24. Ayalon, "The Military Reforms of Caliph al Mu'tasim," pp. 6-7.

25. Al Jāhīz, Rasā'il al Jāhīz, pp. 26-27 and 52-53.

26. Ibid., pp. 26-27.

27. Ayalon, "The Military Reforms of Caliph al Mu'tasim," pp. 33-34.

troops were described as using an early form of the charkh or larkh crossbow, the penetrating power of which was clearly already recognized.²⁸

By Firdawsī's day, however, another nation of infantry warriors had made, or rather remade, a name for themselves. These were the Daylamīs from the Elburz mountains south of the Caspian Sea. Some had, of course, long ago transferred their allegiance from the defeated Sassanians to the rising power of Islam. Not all became Muslims, nor did some of their descendants who similarly served as mercenaries in the armies of the Umayyad and ^CAbbāsīd Caliphs. Large vestiges of pre-Islamic culture also survived in their homeland, even after the bulk of the population had accepted Islam.²⁹ Much the same might be said of their Gīlānī rivals from the narrow Caspian plain. Both peoples served as infantry in many areas, although the Gīlānīs never made quite such a name for themselves ^{and} also remained true to orthodox sunnī Islam while the Daylamīs became fervent shī'īs.³⁰

The reputation of these warlike mountain folk, with their hirsute appearance, liking for garlic, very large brightly painted shields and traditional zhūpīn javelins, was clearly established in the Muslim world by the 10th century.³¹ At this early stage, and during the first phase of Būyīd expansion in Iran, the Daylamīs still fought solely as mounted infantry, with mules to carry their

28. Firdawsī, op. cit., p. 1280.

29. Bosworth, "Military Organization under the Būyids of Persia and Iraq," pp. 146-147.

30. Ibid., p. 149.

31. Minorsky, "New Light on the Shaddādids of Ganja," p. 113; al Tanūkhī, op. cit., pp. 95-96.

equipment, javelins and armour.³² By the mid-10th century, leading Daylamī warriors employed shield-bearers, normally younger men or boys, though this might always have been the case. Full equipment now consisted of the large turs shield, dir^c hauberk, zhūpīn javelin and perhaps a small, slender dagger known as a sakk or "nail".³³ Some wore very heavy jawshan cuirasses while the jubbah hauberk was also mentioned. This latter was, however, described as an inadequate protection against the arrows of Turkish qulāms.³⁴ Yet the Daylamī's chief defence was his large, brightly painted turs shield, and to have this burned after a defeat was a mark of ultimate disgrace.³⁵

As the Būyid state, established by Daylamī arms, grew in wealth and power, so the equipment of these troops seems to have grown in variety. Battle-axes and bows are now mentioned,³⁶ the latter apparently using the nāwak arrow-guide to shoot short arrows elsewhere known as husbān or jawāldūz. Such short arrows had, of course, been known in Sassanian times.³⁷ Daylamī tactics seem to have remained the same, with a steady advance in an unbroken line or moving shield-wall. Javelins were then thrown to disrupt the foe, followed by close combat with battle-axes that might have been similar to an example held by a 9th or 10th century warrior on a north-Persian Gabri-ware bottle (Fig. 344).

32. Al Tanūkhī, loc. cit.

33. Miskawaihī, op. cit., vol.II, pp. 152-153.

34. Ibid., vol.II, pp. 161 and 336.

35. Ibid., vol.II, p. 205.

36. Bosworth, "Military Organization under the Būyids of Persia and Iraq," p. 149.

37. Al Balādhurī, op. cit., pp. 362-363.

This weapon is extraordinarily similar to one carried, perhaps by a mounted infantryman, in north-western India eight centuries earlier (Fig. 71). Some warriors from Daylam had also taken to fighting on horseback rather than operating solely as mounted infantry. These seem to have been heavy cavalry, perhaps influenced by the Kurds or Caucasian Albanians, and they fought with sīnar shield and tabarzīn horseman's axe.³⁸

During the later 10th and 11th centuries Daylamī infantry seem to have been most successful when cooperating closely with cavalry, usually Turkish ghulāms, in Iran and the east. This was also apparently the case in Fāṭimid Egypt where the Daylamīs became close allies of the Turks in Cairo's turbulent politics.³⁹ Similarly, the Daylamīs of the Fāṭimid Caliphate still fought with zhūpīn javelins and battle-axes, and employed young shield-bearers for their tall, oval or kite-shaped shields that were now known as tāriqah (Fig. 149). Other weapons in the Daylamīs' Egyptian armoury might have included galāchūr long curved swords, perhaps referred to in Egypt as galjūrī swords,⁴⁰ plus naft fire-weapons.⁴¹

While Daylamī infantry made their greatest impact in Būyid Iran and Iraq, and in Fāṭimid Egypt and Syria, they were also employed elsewhere. They had already served the orthodox sunnī Ṭulūnid governors of Egypt,⁴² and the sunnī Abbāsīd Caliphs,

38. Niskawaihī, op. cit., vol. II, pp. 336 and 382; Mubārakshāh, op. cit., p. 262.

39. Beshir, op. cit., pp. 47-49.

40. Ibid., pp. 67-70.

41. Ibid., pp. 47-49 and 74 n. 210.

42. Ibid.; Hassan, op. cit., p. 167.

as palace guards and urban police forces,⁴³ though they themselves were shī'ī. The greatest Daylamī impact was necessarily in Iran where, in the late 10th century, their military fashions had become dominant in, for example, the province of Fārs.⁴⁴ One may assume that the warriors shown on foot, wielding broad, blunt-tipped swords, in an early 11th century Arabic manuscript were typical of their day (Fig. 361).

The Būyids' gradual political decline encouraged Daylamī mercenaries to seek their fortunes further afield. They were soon as numerous in late 10th and early 11th century Syria as were unemployed Turkish ghulāms, and similarly sought service under the banners of Fātimids, Uqaylids and Mirdāsids.⁴⁵ Eastwards, in Ghaznawid Afghanistan and north-west India they even formed an élite infantry guard with gilded and bejewelled rather than simply painted shields.⁴⁶ After the fall of the Būyid state, the orthodox sunni Turkish Saljūqs seized power, but the reputation of the Daylamīs persisted to such an extent that they were again recommended as special palace guards, though whether they were ever recruited as such remains unclear.⁴⁷

But it was in Fātimid Egypt that they not only continued to serve in the late 11th and early 12th centuries,⁴⁸ but left

43. Bosworth, "Military Organization under the Būyids of Persia and Iraq," p. 148.

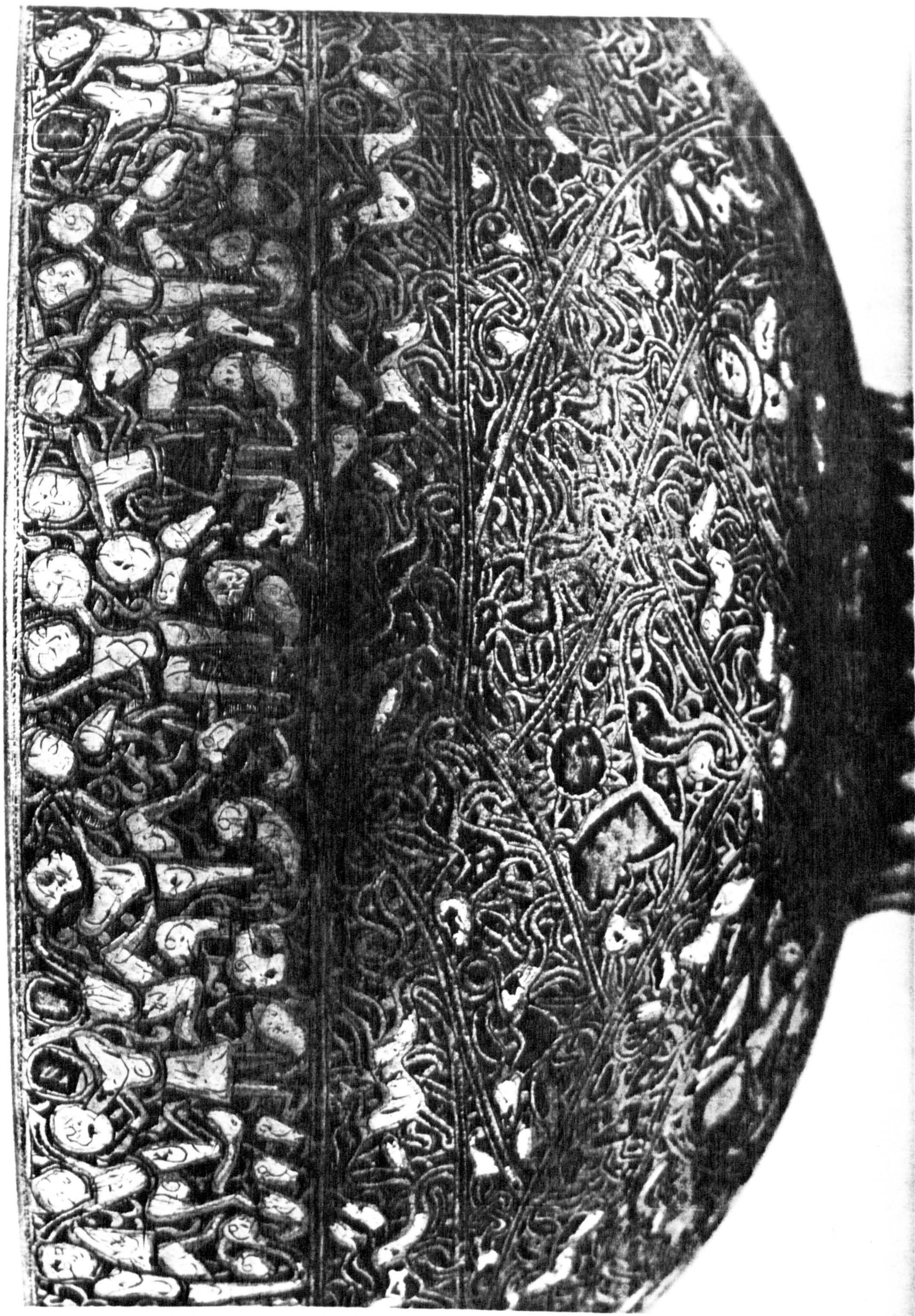
44. Ibn Hawqal, Configuration de la Terre, J. H. Kramers and G. Wiet trans., (Paris 1964), vol. II, p. 283.

45. Beshir, loc. cit.

46. Bosworth, The Ghaznavids, p. 111.

47. Nizām al Mulk, op. cit., p. 67.

48. Canard, "La Procession du Nouvel An chez les Fātimides," pp. 392-393.



perhaps their clearest impression in surviving art of this period (Figs. 157 and 158).

The Daylamīs were not, of course, the only professional infantry of Iran, nor were they the only such troops to earn a reputation outside their own area. The people of Khurāsān were noted foot soldiers, as well as cavalry. They too had their own long established traditions, particularly in siege-warfare and above all in mining operations.⁴⁹ Those Khurāsānīs who were sent westward to the Byzantine frontier seem to have been experts in siege and counter-siege, as were their descendants still living in Antākīyah, Tarsūs and other parts of the province of ʿAwāṣim in the late 10th century.⁵⁰ These people also manufactured siege equipment and other weaponry.⁵¹

The best descriptions of 10th century Khurāsānī infantry are probably to be found in Firdawsī's Shāhnāmāh. Most details refer to open battle rather than to sieges, however, and here such east Iranian foot soldiers are described as advancing with sipar shield and bow, supported by spear-men with normal nīzah spears. Elsewhere those with sipar shields, jawshan cuirasses and nīzah spears formed the front rank while archers and men with iron quzār short spears or javelins stood behind them. A third variation had the corps of infantry to the rear of some cavalry and crossbowmen. In this case they were themselves led by me with nīzah spears and shields from Gīlān, while archers with

49. Cahen, "Djāyḡh," loc. cit.; C. Cahen, "Hiṣār," Encyclopedia of Islam, second edition, vol. III, pp. 469-470.

50. Canard, "Quelques observations sur l'introduction géographique de la Buḡhyat at'-T'alab," pp. 46-47.

51. Ibid.

similar sipar shields supported them.⁵² Some such troops appear on Iranian ceramics from the 9th to 11th centuries. These show a variety of warriors, standard bearers, javelin-men with large shields, and armoured troops with sword and buckler (Figs. 343, 351, 354 and 448).

All other eastern dynasties employed infantry to a greater or lesser extent, even the Saffārids who, in addition to their large cavalry forces, had a sophisticated siege-train. This necessarily consisted of infantry,⁵³ perhaps like those appearing on an east-Iranian chess-piece (Fig. 487). Infantry apparently rose in prestige under the Ghaznavids in the 10th to 12th centuries. In addition to Daylamīs, Indian troops were enlisted by these rulers and similarly fought as highly mobile, camel-riding, mounted infantry.⁵⁴ Though rare in the art of the area, javelin-armed infantry do appear (Fig. 379).

Under the Ghūrīds of the late 12th and early 13th centuries, infantry were naturally even more pronounced for, like the Būyids before them, this dynasty sprang from a mountainous region long famous for its foot soldiers. Their most notable tactic was the use of the kārwah, a large mobile mantlet of raw bullock hide stuffed with cotton, to be carried into battle on the shoulders of the leading troops.⁵⁵ This was proof against most arrows and javelins and could also act as a movable shield-wall to

52. Firdawī, op. cit., pp. 1022, 1156 and 1280.

53. Bosworth, "The Armies of the Saffārids," pp. 547-548.

54. Bosworth, The Ghaznavids, pp. 113-114; C. E. Bosworth, "Ghaznavid Military Organization," Der Islam, XXXVI (1960), pp. 59-60.

55. Bosworth, "Military Organization under the Būyids of Persia and Iraq," p. 151.

trap any enemy who broke the Ghūrīd line.⁵⁶

Once established as a power in northern India, the Ghūrīds apparently adopted more sophisticated battle tactics and techniques, though apparently still giving high priority to their infantry. Archers were traditionally stationed on the right wing, zhūpīn javelin-men on the left. The placing of large numbers of men wielding ḥamūd and qurṣ maces, armoured in full kharātānīn armour that covered the legs, plus troops armed with dabbūs mace, shamshīr long-sword and nāchakh axe in the centre would, however, seem to have been a new development.⁵⁷ Otherwise Ghūrīd ranks were much as they would have been in any ʿAbbāsīd or other Muslim army that had a predominance of infantry. Armoured men with wide shields, siparhā farākḥ, short harbah spears, tīr andāzān "throwing arrows," or small javelins, stood in front. A second rank consisted of men armoured in both jawshan cuirasses and khaftān gambesons, having shamshīr long-swords, sipar shields and nizah long spears. Third came a rank of archers, also with shamshīrs and kārdhā buzurg long daggers, perhaps defended by a thicket of spaced wooden stakes thrust into the ground. Behind them all stood junior officers with daragah shields, shamshīr long-swords and ḥamūd maces. Once again such forces acted in close collaboration with their cavalry, leaving wide spaces so that the latter could manoeuvre and strike the enemy should he break through the infantry ranks.⁵⁸

Very little pictorial evidence survives from the Ghūrīd era, although one of the finest pieces of Muslim metalwork was

56. Mawlānā Minhāj al Dīn, op. cit., pp. 352-353.

57. Mubārakshāh, op. cit., p. 339.

58. Ibid., p. 330.

made in the city of Hirāt at a time when both the Saljūqs of Iran and the Ghūrids of Afghanistan were reeling before a new wave of Ghuzz Turkish nomads. This metal cauldron, known as the Bobrinski bucket, does show a solitary soldier with a curved sword, perhaps a galāchūr, battling against two horsemen (Fig. 368). He may, however, himself be a dismounted horseman.

Infantry continued to play a vital role under the so-called Slave Kings of Delhi, that mamlūk dynasty which seized control of much of the fragmented Ghūrid state early in the 13th century. They were divided into two groups, the Muslim paydah and the Hindu paik.⁵⁹ Ghūrid infantry were also reportedly serving the Khwārazmshāhs in Samarcand when this city fell to the Mongols in 1220 AD.⁶⁰

Some infantry soldiers even served in Mongol armies, as they didⁱⁿ all nomad forces, though of course their status was low. Traditionally a true Turk loathed dismounting to fight.⁶¹ Yet even in their own earliest recorded sagas, probably written down in the 13th or early 14th centuries, a Saljūq hero was prepared to get off his horse, take arrows from his quiver, place them in his belt, roll up his skirts and face his foe on foot.⁶² Equally traditionally, the battle-plan of early Turkish nomad states like that of the Qara Khitai included small units of infantry among the cavalry on its wings, particularly on the left where there was a danger of being outflanked, and also to protect such vital

59. Yār Muḥammad Khān, op. cit., p. 49.

60. Mawlānā Minhāj al Dīn, op. cit., p. 274.

61. Leo VI, loc. cit.

62. Anon., The Book of Dede Korkut, p. 145.

assets as a herd of spare horses.⁶³ That such traditions had a basis in fact is suggested by the well-documented armies of a later but comparable Turkish nomad state on the Eurasian steppes. The 15th to 17th centuries Crimean Tartars had, for example, a small infantry force raised from settled villagers living on the khān's personal domain.⁶⁴

Whereas in the east of Islam most professional infantry were drawn from backward mountainous areas or from major cities, in Africa most infantry came from regions that were poor in horses for both economic and climatic reasons.

Not all African negro infantry were recruited as slaves. They appeared as free men in the first Muslim armies, and among the puritanical Khārījīs of later centuries. Nevertheless, the bulk of black troops serving various North African dynasties do seem to have been of slave origin. Such warriors perhaps appeared first in Aghlabid Ifrīqiyah at the northern end of the great trans-Saharan trade routes.⁶⁵ A little later they are recorded in Tūlūnid Egypt where they took a leading role as unarmoured naval warriors, in addition to forming an élite mukhtarrah guard. This unit wore black robes over decorated iron armour, black turbans around their helmets, and fought with swords.⁶⁶ At around the same time black palace guards were also in fashion in Byzantium.⁶⁷

63. Mubārakahshāh, op. cit., p. 322.

64. L. J. D. Collins, "The Military Organization and Tactics of the Crimean Tartars during the sixteenth and seventeenth centuries," in War, Technology and Society in the Middle East, V. J. Parry and M. E. Yapp edits., (London 1975), p. 260.

65. Dashir, op. cit., pp. 38-44.

66. Ibid.; Hassan, op. cit., p. 171; Ramnaud, op. cit., pp. 419-420.

67. Howard-Johnson, op. cit., pp. 77-78 and 83.

Although the Fāṭimids were later to rely very heavily on such slave-recruited troops, they at first employed greater numbers of free-born Muslim negroes. Many such warriors from the region of Zawīla in the eastern Sudan marched in that Fāṭimid army that conquered Egypt in 969 AD.⁶⁸ Other black Saharans included the Maṣmūdah, who were probably Berber in speech though coming from the western regions of the desert belt. Fighting solely as infantry with sword and spear, they first appeared in Fāṭimid Egypt under Caliph al ʿAzīz. Thereafter these Maṣmūdah played a major role in the garrisons of Syria until the rise of the Murābiṭīn in their own homeland stifled recruitment.⁶⁹

Sudanese slave-recruited troops rose in importance and numbers until they formed almost half of the Fāṭimid army by the year 1000 AD. Thereafter they and free negro mercenaries remained the backbone of Egypt's forces for at least another century.⁷⁰ Their loyalty and spectacular appearance probably led the Fāṭimids to choose them as guard units, as others had done before them. At the very end of the 11th century some three hundred black troops paraded, each with a pair of specially decorated javelins and shields with silvered bosses, during the New Year celebrations.⁷¹ Such splendid infantry guards were clearly still in existence fifty years later.⁷²

68. Beshir, loc. cit.

69. Ibid., pp. 28-34 and 38-44.

70. Ibid., pp. 38-44; Canard, "La Procession du Nouvel An chez les Fatimides," pp. 392-393.

71. Canard, "La Procession du Nouvel An chez les Fāṭimides," pp. 369-370.

72. Usamah ibn Munqidh, op. cit., p. 9.

Whether or not the dark-skinned infantry archers and javelin-men met by the Crusaders outside ^cAsqalān in 1099 AD and at Arsūf almost exactly a century later were Sudanese slave-troops, or Nubian or Ethiopian mercenaries, is unfortunately unclear. At Arsūf they are, in fact, more likely to have been Arab bedouin auxiliaries.⁷³

Information about these troops in their original homelands, whether Muslim, Christian or pagan, can be found in certain medieval Arab geographies. In the late 10th century the Ahadī people of Darfūr and the Tibesti mountains were rich in iron and had much in common with the inhabitants of the southern Maḡhrib. They fought only as infantry with large, white leather, darāqah shields similar to the lamt shields of Morocco, plus harbah short spears or javelins and poor quality local swords. These Ahadī also wore long, perhaps quilted, mufattiḥah protective garments.⁷⁴ Quilted armour was certainly widely used in the similar area of Bornu many centuries later, and it may appear in contemporary art from both Nubia (Figs. 185 and 186) and Ifrīqiyyah (Fig. 194). Infantry predominated in much of Ethiopia at this time. In the north, in the Bāja area, the Bāzīn and Bārīya tribes were archers and javelin throwers, but used no shields.⁷⁵ Pagans living near the source of the Blue Nile fought solely as infantry with harbah short spears or javelins and local pikes of a hard wood known

73. R. C. Smail, Crusading Warfare, 1097-1193, (Cambridge 1956), p. 85; S. Runciman, A History of the Crusades, (London 1971), vol. III, p. 56; Anon., Itinerarium Peregrinorum, The Third Crusade, pp. 87-88; Baha' al Dīn, op. cit., p. 175.

74. Ibn Hawqal, Kitāb Surāt al Ard, p. 58.

75. Ibid., p. 55.



as murrānah.⁷⁶ Shields from that broad swathe of east African coast known to the Arabs as Zanj were also said to be of elephant hide, though being inferior to those of the Bāja.⁷⁷

Little seems to have changed by the 14th century except that some cavalry, mostly riding bare-back in the ancient Berber and Nubian fashions, had appeared in central Ethiopia. Most warriors from this part of Africa remained infantry, however, and fought with large bows shooting relatively short arrows. They also used swords, spears, tall narrow shields and, above all, long javelins.⁷⁸ An impression of these now perhaps better equipped Ethiopians may be seen in some of the earliest Abyssinian manuscripts (Fig. 657).

Negro troops of slave origin served the Zīrid lieutenants and successors of the Fāṭimids in Ifrīqiyyah, as they did the Fāṭimid Caliphs themselves. Known as ʿabīd, they formed a number of regiments, some mounted but mostly infantry.⁷⁹ Others must have served in Sicily for their descendants, unless they were newly recruited mercenaries, appear in Siculo-Norman art both in Sicily and on the mainland. In most cases their weapons, as distinctive as their tightly curled hair, are portrayed as mace and buckler (Figs. 588 and 606). They clearly continued to be recruited by North African rulers, at least until the 14th century in Hafsīd Tunisia where those of Guinean origin were known as janāwa and fought with spear, sword and small shield. Whether

76. Ibid., p. 57.

77. Al Masʿūdī, op. cit., vol. III, p. 18.

78. Al ʿUmarī, Masālik al Aḥsār fī Mamālik al Aḥsār, pp. 6 and 25-26.

79. Brett, op. cit., p. 82.

or not their white jubbahs were protective hauberks, as they were in 14th century Mamlūk Egypt, or simply a style of tunic is unclear.⁸⁰

As already mentioned, the Fāṭimid armies contained a high proportion of infantry to the end. These were recruited from a great many sources. In battle they were arrayed by tribe, unit or national origin, with armoured men in the front rank. If attacked, they would make a wall with the bases of their tall shields being thrust into the ground. Their spear-butts were similarly planted to act as pikes, while archers and javelin-throwers supported these pikemen. In attack such infantry would advance either en masse or by sending selected sections of the line to take advantage of any faltering by the foe. Cavalry would cover such attacks and, together with infantry archers, pursue a beaten foe.⁸¹

In other words, Fāṭimid tactics were essentially those of the later Umayyad era. Their weapons were similarly traditional, consisting of large leather lamt shields, javelins, bows and swords that perhaps included the newer and slightly curved Iranian galāchūr. Many infantry were in fact armoured. The long pikes with iron butts that were used by men in the front ranks were possibly known as sabarbarah. They were five cubits long, of which up to three cubits could form a broad iron blade. As such they might better be described as glaives. Some pikemen also carried small javelins. Crossbows were known, but seem to have been a speciality of naval troops. Some younger soldiers also seem to have been armed with shorter furayjīyah spears which

80. Al ʿUmarī, op. cit., p. 82.

81. Beshir, op. cit., pp. 76-79.

could also have been glaives or bills.⁸²

This armoured infantry may have included that less than reliable jund misr which, living in Cairo, took part in various battles in the declining years of the Fāṭimid Caliphate.⁸³ Certainly there is plenty of pictorial evidence of such infantry in the art of the Fāṭimid era from the 10th to 12th centuries. These show a great variety of weapons, though with little indication of the cultural origins of the troops involved (Figs. 148, 152, 153, 155, 161 and 163). They are similarly apparent in Zīrid Ifrīqiyyah (Figs. 193 and 194).

The next wave of North African conquerors relied on infantry to a similar if not even greater extent. These were the Murābiṭīn, but unfortunately they are not apparently to be seen in any surviving pictorial sources. The main difference between the Murābiṭīn and the mid-11th century and other Berber warriors was their refusal to indulge in karr wa: farr, attack and retreat, either by infantry or by cavalry. Rather they obliged the enemy to attack them and then refused either to retreat or to advance. Their religious commitment, of course, enabled them to accept unusually high casualties. Nor would they pursue a beaten enemy. Their name probably recalls such tactics, since they made a ribāt, fortification or strongpoint, out of their own closely packed and immovable battle-array.⁸⁴

Although the Murābiṭīn had small cavalry and camel-mounted

82. Ibid., pp. 67-70; Canard, "La Procession du Nouvel An chez les Fatimides," pp. 374 and 392-393; M. Canard, "Le Cérémonial Fatimite et le Cérémonial Byzantin," Byzantion, XXI (1951), p. 397.

83. Usāmah ibn Munqidh, op. cit., pp. 8 and 32.

84. Moraes Farias, op. cit., pp. 815-816.

forces even in the mid-11th century, they never changed these tactics and such steadfast discipline certainly appalled their Spanish enemies at the battle of Zallaca in 1086 AD. In equipment, however, they differed little from other North African and Egyptian armies. Long spears or pikes were used by those in the front ranks, with javelin throwers, apparently carrying more of these weapons than was normal elsewhere, standing behind them.⁸⁵ Their use of large leather lamt shields probably made armour largely unnecessary in such a static style of warfare.⁸⁶

The subsequent Muwahhidun of the 12th and 13th century Maghrib are only slightly better illustrated. They, however, did not rely to such a large extent upon infantry. Nevertheless, even they fought in a somewhat static fashion that gave primacy to the foot soldier. Their most original contribution to these early wars of attrition was a chained palisade to protect their chosen rallying point. This was clearly a defence against cavalry. They themselves, coming from the richer and largely settled regions of Morocco, could afford both cavalry and infantry recruited from the plains and the mountains. In addition to the Muwahhidun chained palisade, both cavalry and infantry appeared in the final battle of Las Navas de Tolosa in Spain in 1212 AD.

A little earlier, Muwahhidun weapons seem to have been daraqah shield and rumh spear for cavalry, khanjar large dagger or small sword, rumh spear and sikinah dagger for infantry.⁸⁷

85. Al Bakrī, Description de l'Afrique Septentrionale, De Slane trans., (Paris 1913), p. 314.

86. H. T. Norris, "The Hauberk, the Kazāghand and the ^cAntar Romance," Journal of the Arms and Armour Society, IX (1978), pp. 98-99.

87. Abū Bakr ibn ^cAlī al Ṣanhājī al Baidhaq, "History of the Almohades," in Documents Inédites d'Histoire Almohades, E. Lévi-Provencal, edit. and trans., (Paris 1928), pp. 124, 172, 177, 194 and 199.

There is little reason to suppose that such weapons were not interchangeable between foot and horse. As far as the daraqah shield was concerned, this had almost always been of leather, but by the 12th century a specific kidney-shaped version had appeared in the Maghrib. This would later be adopted by the Spaniards and other Europeans as the Adarga and it is perhaps first seen in the hands of a Muslim foot soldier from the late 12th century (Fig. 532).

A possibly earlier version of this small leather shield with its indented top may be seen in Norman Sicily, perhaps in the hands of those originally Arab and Berber troops who were the kingdom's most dependable warriors in the 12th century. Their ancestors, who conquered Sicily in the 9th century, clearly fought in traditional ^CAbbasid style. During the invasion this largely involved infantry forces, drawn up beneath the banners of their leaders and covered by cavalry, provoking the enemy into making the first attack.⁸⁸ In those early years most references to items of equipment deal with booty won from the Byzantine foe. It also seems likely that the Christian population of Sicily was not immediately demilitarized following the Muslim conquest. A large Christian contingent helped the Fātimids enter Egypt, and this probably came from Sicily or Sardinia which were then both under Muslim rule. Since a fleet from Amalfi perhaps also took part in this operation, such participation should not be too surprising.⁸⁹ It has also been suggested that a number of Russian-Scandinavian Varangians, plus some Armenians, captured while serving under the

88. Amari, Storia dei Musulmani di Sicilia, vol. I, p. 397.

89. C. Cahen, "Un texte peu connu relatif au commerce oriental d'Amalfi au Xe siècle," Archivio Storico per le Province Napoletane, XXXIV n.s. (1955), pp. 64-65.

Byzantine flag in Sicily, were later employed by the *fātimids* during their conquest of Egypt.⁹⁰ The majority of such troops would almost certainly have been heavy infantry, perhaps operating as mounted infantry.⁹¹

The evidence of the last decades of Muslim rule in Sicily suggests that the warriors of this island were very mixed, both infantry and cavalry. Most were lightly armed but there was also a substantial minority of armoured troops, while the heavy hauberk or cuirass was not unknown.⁹² Numerous carved ivory boxes and oliphants that might have come from these, or from early Norman, decades illustrate infantry wearing mail or scale hauberks of various shapes, but almost all paralleled in Muslim al Andalus (Figs. 597-602 and 607). The Norman conquest of Sicily had at first little impact on its military organization and, where indigenous Muslim infantry were concerned, this seems to have remained true for a long time. Existing territorial *junds* provided the new rulers with infantry and cavalry, although in an emergency the entire adult male population, Muslim and Christian, appears to have had a military obligation. Nevertheless, the paid Muslims of the *junds*, led by their own *qādīs*, remained the real military backbone of Sicily under the Normans and their immediate successors. They provided half the available troops and fought as siege-engineers, archers and heavy infantry. Their importance also apparently increased as the Norman state grew more centralized.⁹³

90. Blondal and Benediktz, *op. cit.*, p. 39.

91. *Ibid.*, p. 47.

92. Gabrieli, "Gli Arabi in Spagna e in Sicilia," p. 718.

93. C. Cahen, *Le Régime Féodal de l'Italie Normande*, (Paris 1940), pp. 76 and 118; E. Curtius, *Roger of Sicily*, (London 1912), pp. 365 and 371-372; F. Chalandon, *Histoire de la Domination Normande en Italie et en Sicile*, (Paris 1907), vol. II, p. 535.

So highly regarded were such troops that they formed a guard of infantry archers for the Royal Treasury.⁹⁴

Records of their achievements in siege warfare are numerous, though only against Christian princes in Italy or the Balkans, not against their co-religionists in North Africa.⁹⁵ Yet Muslim Sicilians also served in these war-zones as both heavy and light infantry as well as cavalry, while others may have been included among those volunteers who fought only for booty.⁹⁶ Such varied troops certainly appear on the paintings and carvings of the Norman kingdom. Many may, however, wear costume and carry equipment that were identical to those of Christian infantry from these same areas. Thus they may be impossible to identify with certainty (Figs. 577, 588, 603, 604, 606 and 609).

Regular and auxiliary warriors were involved, not only in the collapse of Norman rule,⁹⁷ but also in attempts to resist the subsequent Hohenstaufen destruction of Islam in western Sicily.⁹⁸ Even after the Muslims were exiled to the Italian mainland they were still recruited by their new masters, the crossbowmen of Lucera being particularly highly regarded.⁹⁹ This weapon had, of course, long been known in Sicily where it

94. E. Jamison, Admiral Eugenius of Sicily, (London 1957), p. 39.

95. Ahmad, op. cit., pp. 66-67; F. Gabrieli, "La Politique Arabe des Normans de Sicile," Studia Islamica, IX (1958), pp. 92-93.

96. Buckler, op. cit., p. 376; Arnold of Lübeck, "Chronica Slavorum," in Amari, Storia dei Musulmani di Sicilia, vol. III/2, p. 547.

97. Jamison, op. cit., p. 114.

98. E. Lévi-Provençal, "Une héroïne de la résistance Musulmane en Sicile au début du XIIIe siècle," Oriente Moderno, XXXIV (1954), p. 286.

99. Ahmad, op. cit., pp. 105-106.

was used alongside a variety of bows and slings (Fig. 610).

While Christians might have played a small role in the armies of Muslim Sicily, they certainly played an important one in those of Egypt and the other central Muslim lands from the 10th to 13th centuries. Not all eastern Christian communities were, of course, involved. Many had by this time lost most of their military traditions. The Armenians, by contrast, had not. Although many accepted Islam, the majority of this nation remained faithful to Christianity even when serving in Muslim armies.

Outside their own region, which remained under the distant but effective control of the Caliphs until the 10th century, Armenian mercenaries were not very apparent until the later 9th century when they were employed in small numbers by the Ṭūlūnids. Most such troops would seem to have been Muslim, and at one time formed a militia in a quarter of the Egyptian capital known as al Ḥusaynīyah.¹⁰⁰ In the 10th century, when the Armenian mountains were divided between various quasi-independent Christian and Muslim rulers, a few Armenian troops reappeared in Ḥamdānid, Mirdāsid and Fāṭimid forces, and among the Byzantines.¹⁰¹ Some early Armenian manuscripts of this period show armour to have been similar to that of the Byzantines, which was itself, of course, not so different from that of the neighbouring Muslims (Fig. 242).

A major change seems to have taken place with the Byzantine occupation of almost all Armenia in the early 11th century. Thereafter a great many Armenians, mostly perhaps soldiers,

100. Beshir, op. cit., pp. 49-51; M. Canard, "Notes sur les Arméniens en Egypte à l'époque Fatimite," Annales de l'Institut d'Études Orientales de la Faculté des Lettres d'Alger, XIII (1955), p. 144.

101. Beshir, op. cit., pp. 49-51.

migrated to Fāṭimid Egypt where they formed an important military contingent which was best known for its infantry archers. Whether the bulk of such troops were Muslim, as would seem likely, or Christian, their leadership certainly was Muslim.¹⁰² Unfortunately, the limited available pictorial material from Armenia itself does not show archers. Rather it illustrates infantry with large shields and perhaps pikes (Fig. 243). The turbulent politics of the later Fāṭimid Caliphate even enabled these Armenian troops to seize military dominance in Cairo in 1073/4 AD. Their leader, Badr al Jamālī, became vizier and thereupon encouraged the recruitment of even larger numbers of his countrymen.¹⁰³ It is interesting to note that one Armenian manuscript of around this period shows the same flat-bottomed, kite-shaped shield with pseudo-Kūfic decoration that also appears in various Coptic and other eastern sources (Fig. 246).

The Saljūq and Crusader conquests of eastern Anatolia and the Syrian coast caused Egyptian recruitment of soldiers from the Armenian heartland to be severely limited in the late 11th and 12th centuries.¹⁰⁴ With the Crusader occupation of the Cilician plain in Lesser Armenia in 1109 AD, however, many Armenian warriors apparently offered their services to Fāṭimid Egypt. There they were to form the bulk of the juyūshi troops under the leadership of a Christian Armenian, Bahrām, who subsequently became the Caliph's vizier.¹⁰⁵ In fact, most such Armenian infantry

102. Ibid.; M. Canard, "Un Vizir Chrétien à l'Époque Fāṭimide; l'Armenien Bahrām," Annales de l'Institut d'Études Orientales de la Faculté des Lettres d'Alger, XII (1954), p. 97.

103. Beshir, loc. cit.; Canard, "Notes sur les Arméniens en Egypte à l'Époque Fatimite," p. 145.

104. Beshir, loc. cit.

105. Canard, "Un Vizir Chrétien," pp. 94-97.

archers in Egypt were now apparently Christians.

These Armenians were clearly catholic in their tastes for employers, serving Nūr al Dīn of Syria in both siege and wider operations, the Munqidhites of Shayzar, the Crusader states where they often fought under their own lords, and the Saljūqs of Rūm.¹⁰⁶ The influence of these varied employers may be reflected in Armenian manuscripts showing warriors. Muslim as well as persistent Byzantine styles mingle in various mid- or late 13th century sources from eastern Armenia (Figs. 248, 250 and 251), while Frankish influence is obvious in a manuscript dated 1318 AD (Fig. 654). Few other Christian communities in the Middle East had retained such martial traditions, although the Maronites of Mount Lebanon remained an exception. They, like the Armenians, were effective infantry archers and although they are best remembered as occasional allies of the Crusaders,¹⁰⁷ they probably served locally before the Franks arrived in Syria. The partially, or in some later cases wholly, Syrian turcoples who played such an important role in Crusading warfare consisted of both infantry and light cavalry. On foot they chiefly seem to have been archers.¹⁰⁸

At this same time there was a revival of infantry in those Muslim states opposing the Crusades. Yet this was not, to any great degree, a result of the Franks' own reliance on heavy infantry. Crusader emphasis on close cooperation between horse and foot

106. Elisséeff, op. cit., p. 733; Usāmah ibn Munqidh, op. cit., p. 106; Smail, op. cit., p. 47; S. Vryonis Jr., "Byzantine and Turkish Societies and their sources of manpower," in War, Technology and Society in the Middle East, V. J. Parry and H. E. Yapp edits., (London 1975), p. 141.

107. Smail, op. cit., pp. 52-53.

108. Usāmah ibn Munqidh, op. cit., p. 51; Smail, op. cit., p. 112; Prager, op. cit., pp. 340-341.

in open battle was essentially no different to those tactics employed earlier by both Byzantines and Fāṭimids. The revival of infantry in those minor states that took over Syria and the Jazīra from the crumbling empire of the Great Saljūqs in the 12th century was more a revival of tradition. It occurred as those nomadic tribes of Turkish horse-archers, upon whom the Saljūqs had largely depended, were relegated to the frontiers.¹⁰⁹

In addition to Armenians such as those mentioned above, the Zangids of the Jazīra employed large numbers of archers, crossbowmen, siege-engineers, naffatīn naphthathrowers and heavy infantry with shield, spear and pike. Among those specializing in siege warfare, Khurāsānīs and men from Aleppo were particularly notable.¹¹⁰ When Mūr al Dīn chose to face his enemies in open, set-piece battle, such foot soldiers seem to have fought in a traditional manner, again cooperating with their cavalry as they had long done.¹¹¹

Comparable infantry armed with sword, turs shield, quntārīyah or rumh spears, qārūrah grenades of naphtha, sikīnah dagger, zardīyah mail hauberk and khūdhah helmet, apparently with a mail aventail across the face, are all mentioned in the memoirs of Usāmah ibn Munqidh.¹¹² In fact, they probably served in most armies of this area, large or small. Such infantry may also be reflected in art from the Crusader states, particularly where "enemy" warriors or figures symbolizing the Sins are concerned (Fig. 267). They are, however, almost certainly to be seen in

109. Cohen, "Djaysh," loc. cit.

110. Elisséeff, op. cit., pp. 733-735.

111. Ibid., p. 742.

112. Usāmah ibn Munqidh, op. cit., pp. 74-75 and 124.

many pictorial sources from the Muslim side of the frontier, ranging from Azarbayjān and the Caucasus to the Jazīra itself. In most cases their equipment is traditional, though with curved swords now shown more frequently (Figs. 318, 372, 373, 376, 380, 386, 420, 422 and 423).

Infantry remained important under Ṣalāḥ al Dīn and the Ayyūbids. They may, indeed, have increased now that Islam was on the offensive against a string of Crusader states that relied, above all, on the defences of their massive castles. Ṣalāḥ al Dīn's armies varied in their constitution, but at different times included Arab infantry and cavalry of the large Kinānah confederation, plus Ḥasānīyah and other troops inherited from the Fāṭimid Caliphate. Junior mamlūks were also trained to fight on foot, as well as mounted, while other tribal levies, jund local militias from various Syrian cities, the highly regarded siege troops of Aleppo and Mosul, plus some comparable specialist men from Khurāsān itself, are all recorded.¹¹³

Open battle with infantry facing infantry, cavalry facing cavalry, was an issue that both Franks and Ayyūbids tended to avoid. Yet, according to al Ṭarsūsī, Muslim foot soldiers were still trained to draw themselves up in ranks ahead of the cavalry, behind a wall of januwayah and tāriqah tall shields. Thereafter, cooperation between horse and foot remained as it had for centuries, except that the infantry could now add the jarkh crossbow to their existing arsenal of sword, spear, javelin and bow.¹¹⁴ Such tactics were clearly more than merely theoretical and seem to have been

113. Gibb, "The Armies of Saladin," loc. cit.; Imād al Dīn, op. cit., vol. I, pp. 22 and 144.

114. Al Ṭarsūsī, op. cit., pp. 125-126.

used by Ṣalāḥ al Dīn's garrison at Ḥakkah during one major sortie.¹¹⁵ Comparable troops may well be illustrated in a Coptic Gospel from early Ayyūbid Egypt (Fig. 166).

Those Muslim archers and javelin-throwers who opened the battle of Arsūf in 1191 AD may have included such trained, professional infantry.¹¹⁶ Generally, however, the role of Ayyūbid infantry was limited to siege-warfare. This, of course, could mean open battle during the siege or blockade of a fortified place. Arabic and Latin sources agree that the Muslim troops involved in such fighting varied greatly in their arms and armour, from lightly equipped jarīdah warriors to heavily protected thaqlāh infantry and dismounted, but still armoured, horsemen. Among the items of equipment mentioned are swords, daggers, double-edged axes, winged or knobbed maces, light spears, jarkh crossbow, turs shields, qārūrāh naptha grenades, zarrāq naptha "tubes" or flame-throwers, bows, yalab large leather shields, dhubalah spears, sābiḥah mail hauberks, quntārīyah lances, dir^c hauberks and majann leather shields.¹¹⁷ These various shields, plus other forms of mantlet, were in fact often used to build an effective shield-wall in what virtually became trench-warfare.¹¹⁸

One pictorial source from just after Ṣalāḥ al Dīn's death, and from the region where some of the best siege troops were recruited, shows an infantryman with a short spear (Fig. 284). Similarly equipped troops appear in both Christian and Muslim art

115. Anon., Itinerarium Peregrinorum, p. 26.

116. Runciman, op. cit., vol. III, p. 56.

117. Bahā al Dīn, op. cit., p. 77; anon., Itinerarium Peregrinorum, pp. 64 and 78; Ḥimād al Dīn, op. cit., pp. 39, 75, 135, 150, 164 and 191.

118. Ḥimād al Dīn, op. cit., pp. 135 and 191.

of this area in the following century and probably indicate that these men and their reputations lasted right up until the Mongol invasions (Figs. 288, 289, 292, 294, 296-299, 302, 305 and 306).

Many of the same troops, including the ex-Fāṭimid Kinānah, continued to serve Ṣalāḥ al Dīn's Ayyūbid successors,¹¹⁹ and to appear in Ayyūbid art (Figs. 170 and 172). Their equipment also seems to have remained the same, consisting of swords, spears, kabūra cuirasses, mail hauberks, turs, januwiyyah, tāriqah and other shields, bows, crossbows and a great variety of siege equipment. Their tactics and training similarly did not change.¹²⁰ While later Ayyūbid art shows many warriors on foot, most seem by their equipment and foot-wear to be dismounted horsemen. Only rarely are they certainly infantry (Fig. 177) as indicated by bare feet and a sort of puttees.

The armies of Islam also attracted troops from Christendom, both Orthodox and Catholic. Much the larger proportion would seem to have been infantry which was, of course, the area in which specialized professional Mercenary troops first emerged, even in Europe. Most would probably have been heavy infantry or siege engineers, crossbowmen, archers and the like.

Byzantium was relying on its infantry forces to a great extent throughout this period. They were early divided into light skirmishers, javelin throwers, slingers or archers (Fig. 206), and heavily armoured men trained to fight in ranks (Fig. 199).

119. Jamāl al Dīn ibn Waṣīl, "Mufarrij al Kurūb fī akhbār Banī Ayyūb," in Arab Historians of the Crusades, Gabrieli edit., p. 285.

120. Al Harawī, "Les Conseils du Ṣayḥ al Harawī à un Prince Ayyūbide," J. Sourdcl-Thomine trans., Bulletin d'Etudes Orientales, XVII (1961-1962), pp. 232-239.

Even during Byzantium's offensive phase in the 10th century, heavy and light infantry continued to play a vital role. The former provided a secure square from which the cavalry could deliver its charges, while light infantry continued to fight as skirmishers and play an offensive role in broken country.¹²¹ Once again they constantly appear in Byzantine art, light (Figs. 211, 217 and 220B) and heavy (Figs. 212 and 220A). Such troops were almost certainly included among those Byzantine prisoners and mercenaries recruited by the Ṭūlūnids of Egypt during the 9th century.¹²²

While the decline of Byzantine military effectiveness in Anatolia chiefly affected local aristocratic cavalry and to a lesser extent also infantry levies from peaceful regions far from the frontiers, it does not seem to have applied to the troubled border provinces. Here a new system of limites was, in effect, set up. Such frontier troops were backed up by powerful central forces that also included large numbers of heavy infantry among whom the battle-axe became an increasingly popular weapon. In combat the same tactical concepts persisted.¹²³ Light infantry of these provincial limites are probably to be seen in the art of such frontier regions as Cappadocia (Figs. 207 and 214-216).

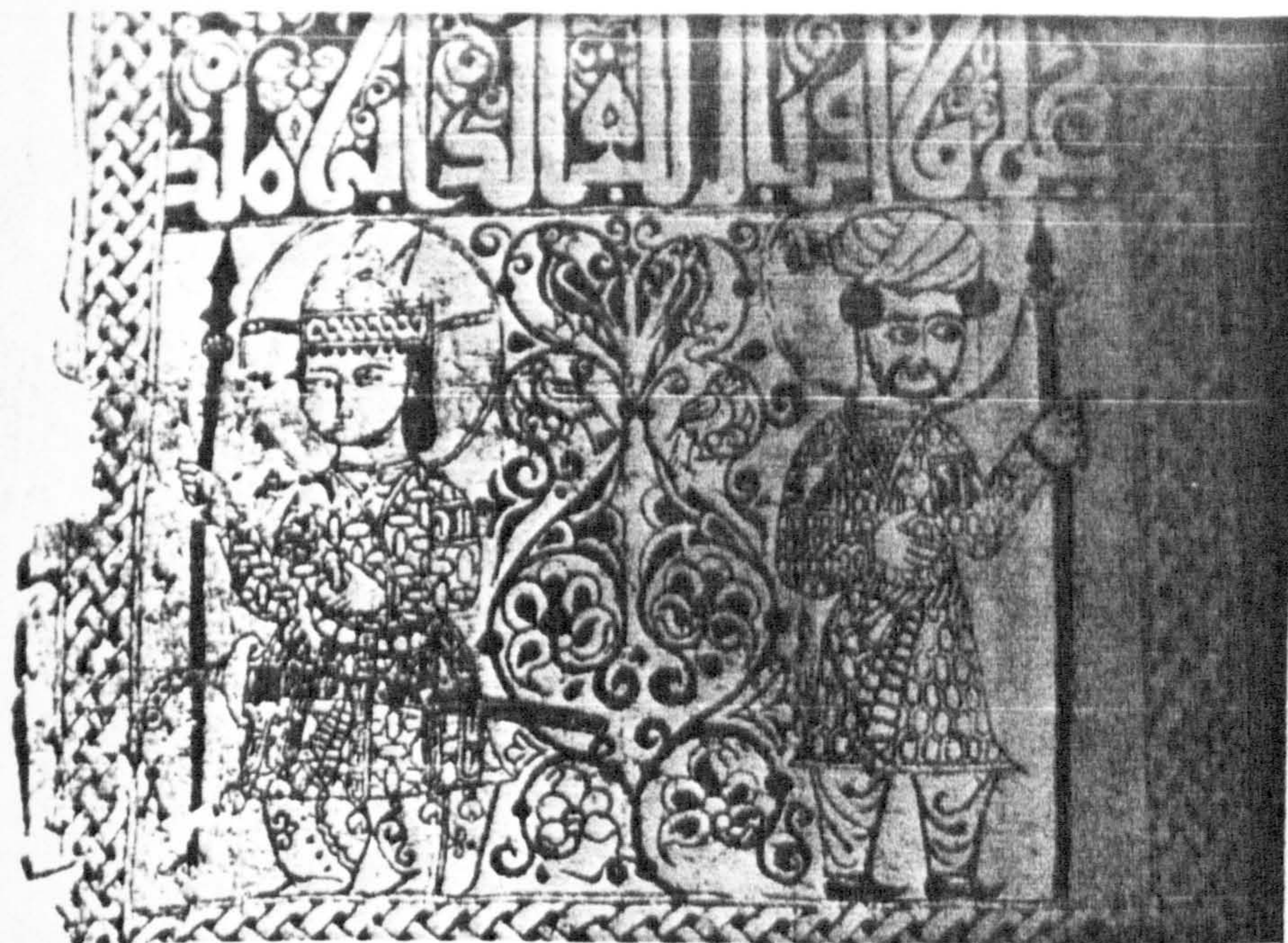
Following the disasters of the Saljūq invasions during the later 11th century, Byzantium sought to revive its infantry forces.¹²⁴

121. Howard-Johnson, op. cit., pp. 282-286.

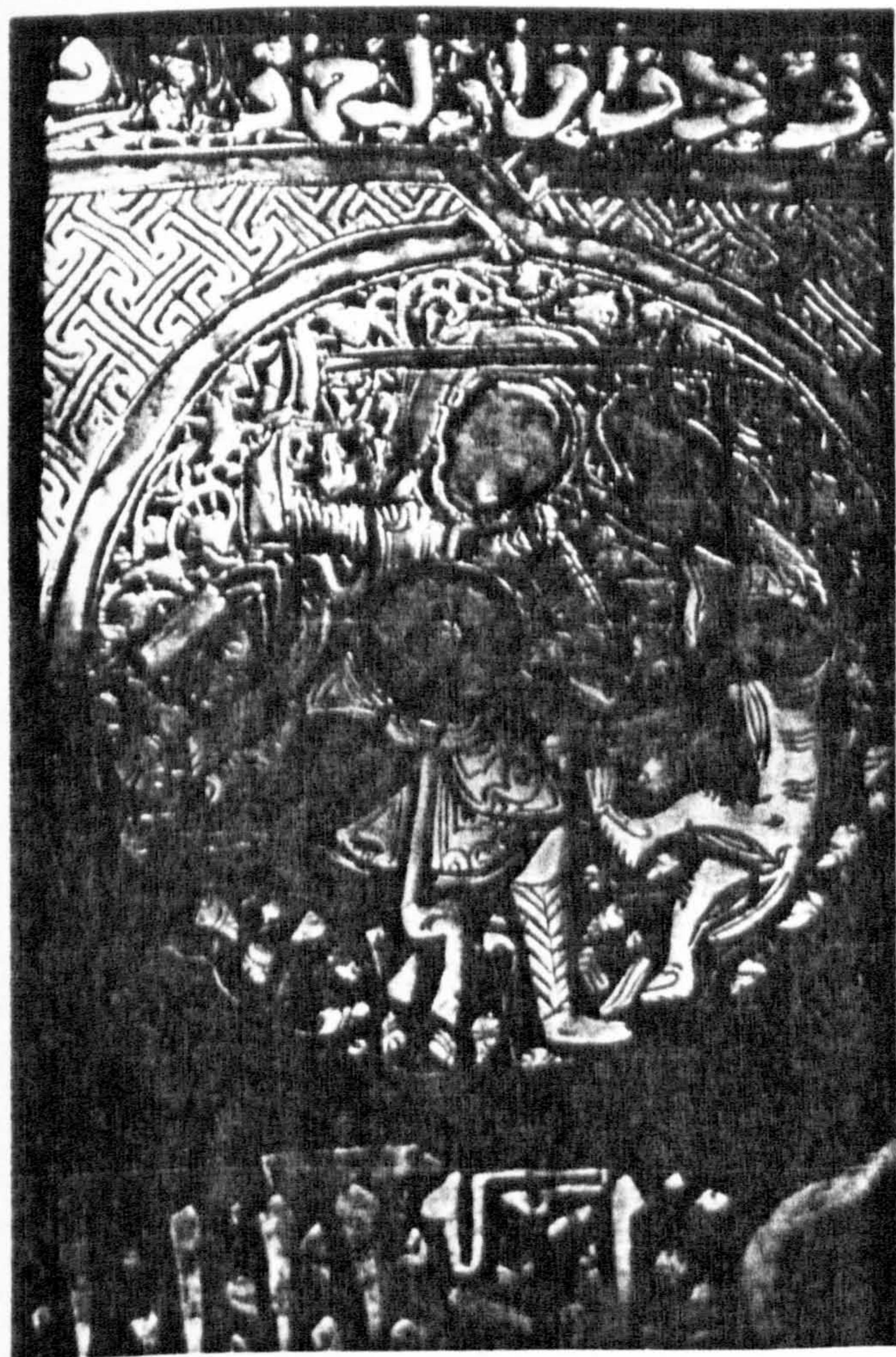
122. Bosworth, "Armies of the Prophet," p. 203; Haasan, op. cit., p. 168.

123. Howard-Johnson, op. cit., pp. 142 and 144; Psellus, op. cit., pp. 30, 47 and 141; G. Schlumberger, "Deux Chefs Normands des Armées Byzantines au XI^e Siècle," Revue Historique, XVI (1881), p. 299.

124. Chalandon, Les Comnènes - Etudes sur l'Empire Byzantin, vol. I, pp. 277-279 and vol. II, p. 21.



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Again light and heavy corps were organized (Figs. 222 and 225), though circumstances seem to have forced a concentration on the former. These troops, the light armed with bow and small shield, the heavy with axe, sword and either large or small shield, clearly enjoyed a good measure of success in the 12th century. Paradoxically, however, Byzantium now found itself less skilled in siege warfare than many of its foes.¹²⁵ This would seem to have remained the military situation in Byzantium, though with additional domestically recruited and foreign mercenary cavalry, throughout its long decline during the 12th to 15th centuries. Such troops continue to appear in the art of this twilight age (Figs. 228, 230, 231, 233, 237, 238, 655 and 656). No doubt it was infantry, skilled in the defensive, almost guerrilla, warfare of Bithynia and the other mountainous provinces along Byzantium's new frontier against the Turks, who were now so eagerly recruited by these same Turks. Most were captives who chose to serve the Saljūq sultans of Rūm as garrison troops and siege engineers or as ḡandar guards of the ruler himself. Some, however, seem to have been mercenaries¹²⁶ (Figs. 257, 258 and 262).

The Saljūq rulers of Rūm also employed Georgian troops,¹²⁷ as had earlier been recommended to the Great Saljūq rulers of Iran. Some Georgians apparently fought as infantry using javelins heavy enough to dismount a horseman. Others fought with bow and lasso in Turkish style. In general, however, these Georgians seem to have been armoured troops, mostly mounted, but well able

125. Ibid., vol. II, pp. 618-619 and 620-622.

126. C. Cahen, Pre-Ottoman Turkey, (London 1968), pp. 230-234.

127. Vryonis, loc. cit.

to fight on foot when the need arose.¹²⁸ As such they seem to have had more in common with their Arab, Persian and Kurdish neighbours than with the more specialized Turks or Byzantines (Fig. 421).

Other foreign troops serving in Islam included the sagālibah of supposed Slav but probably more varied origin. They were apparently acquired as slaves via Spain, Venice and elsewhere, and were trained from youth in the military styles of their new homes. Such sagālibah served in the armies of both Tūlūnid and Fāṭimid Egypt, Aḥlābid Ifrīqiyah and Abbāsīd Iraq.¹²⁹

Finally there were the Franks. European mercenaries, many perhaps from in or around those Italian maritime republics that were already in close commercial contact with the Middle East, are known in Fāṭimid Egypt at least as early as the late 11th century.¹³⁰ They may, in fact, have been numbered among rūm al murtaziqah mercenaries recorded in Cairo in 1005 AD. In this case, comparable troops may also have served in Ḥamdānid and earlier Tūlūnid forces.¹³¹ The infantry of Italy was, at this time, not dissimilar to that of the Muslim side of the Mediterranean (Figs. 560-562, 565, 568-571 and 574).

128. Psellus, op. cit., p. 36; M. Canard, "Les Reines de Géorgie dans l'histoire et la légende musulmanes," in Revue des Etudes Islamiques, xxxvii 1969, p. 17; Rust'havelli, op. cit., passim.

129. Bosworth, "Recruitment, Muster and Review in Medieval Islamic Armies," pp. 66-67; Beshir, op. cit., 34-38 and 63-67; Imamuddin, "Commercial Relations of Spain with Iraq, Persia, Khurasan, China and India in the Tenth Century AC," p. 179.

130. Canard, "La Procession du Nouvel An chez les Fatimides," pp. 392-393.

131. Beshir, op. cit., pp. 51-52.

After the confusion of the First Crusade and the establishment of relatively fixed frontiers between the Saljūqs of Rūm and their Christian neighbours, west European, Frankish, warriors soon appeared in Saljūq service.¹³² Whether those of the 12th century were cavalry or infantry is unknown, but they probably included both. Others may also have served in Ayyūbid Syria, though these would have been regarded by their co-religionists as renegades which those in Saljūq Rūm, ^{reason,} ~~for some~~ were not. Some of these latter were, in the late 12th and early 13th centuries, recruited from released Crusader prisoners while others, particularly sailors and crossbowmen, were apparently Italian mercenaries. Such adventurers were already serving far from their homes in many European armies (Figs. 579, 582 and 587).¹³³ Their numbers were quite high in the Saljūq sultanate before the Mongol invasions, while after this date others also fought for the Ilkhāns of Iran¹³⁴ and perhaps even for the Sultans of Delhi.¹³⁵

The infantry of the Mamlūk state in Egypt and Syria seems to have been either locally recruited or drawn from the ranks of junior mamlūks. Unlike their aristocratic Frankish foes, even the most senior mamlūks were quite prepared, and indeed trained, to dismount and fight on foot. Most of the earliest available information comes from the first half of the 14th century, but there is little reason to suppose that there were any major changes

132. J. Richard, "An Account of the Battle of Hattin referring to Frankish Mercenaries in Oriental Moslem States," Speculum, XXVII (1952), pp. 169 and 171; Cahen, Pre-Ottoman Turkey, loc. cit.

133. Richard, op. cit., pp. 172-174.

134. Ibid., p. 174.

135. Yār Muḥammad Khān, op. cit., p. 22.

during the first war-torn century of the Bahrī Mamlūk state. Some of the first furusiyya manuals still declare infantry to be superior to cavalry in "cautious" or defensive warfare,¹³⁶ and that they were vital to defend an army's encampment while in hostile territory.¹³⁷ A great deal of attention is given in these works to combat between infantry and cavalry, and how the former can best defend themselves against the latter. Nor were infantry always considered to be on the defensive in such encounters, for they were expected to check, scatter and pursue cavalry.¹³⁸ Similarly, they still apparently acted in cooperation with horsemen, protecting their own cavalry from hostile infantry in both advance and defence. It was, however, recognized in these sources that infantry were no longer quite as effective as they had been in earlier centuries.¹³⁹

These various sources list a great variety of arms and armour to be used by infantry, many of whom seem to have been archers drawn from the settled communities of Syria, Palestine and Lebanon.¹⁴⁰ For defence there were small daraqah and larger tāriqah shields, though the armour to be worn is rarely described as specifically for infantry or for cavalry. In attack there are swords, tabar axes, dabbūs al muharrafah winged maces, bows,

136. Al Aqsarā'ī, op. cit., pp. 325 and 336-337.

137. Umar ibn Ibrāhīm al Awsī al Ansarī, Tafrīj al Kurūb fī Tadbīr al Hurūb, A Muslim Manual of War, G. T. Scanlon trans., (Cairo 1961), p. 87.

138. Al Ansarī, op. cit., p. 72; al Aqsarā'ī, loc. cit.

139. Al Ansarī, op. cit., pp. 104-105 and 107; al Aqsarā'ī, op. cit., pp. 325 and 337-338.

140. A. N. Poliak, Feudalism in Egypt, Syria, Palestine and the Lebanon, 1250-1900, (London 1939), pp. 11-14.

rumh spears, zārīq javelins, khanjar short swords and ḥamūd maces.¹⁴¹ Similarly, the art of the area, including that from the Crusader states, shows late 13th and early 14th century Muslim infantry to be as varied in their equipment, offensive or defensive, as were Muslim cavalry of the period (Figs. 273, 274, 301, 311, 312, 649 and 650A).

Whether they participated primarily as siege troops or as mobile infantry forces in open battle, infantry clearly had a major role to play in Muslim warfare in the late 13th century, even in the Mamlūk state of Syria and Egypt.

141. Al Ansarī, op. cit., pp. 107-108; al Aqṣarā'ī, loc. cit.

CHAPTER 7

EUROPEAN INFLUENCE IN AL ANDALUS

Cavalry probably continued to flourish in the Iberian peninsula throughout the so-called Dark Ages. Compared with its neighbours to north and south, the area had long been rich in horses and this was bound to have an effect on its Muslim conquerors in the 8th century. Although the Arabs and Berbers had themselves been poor in cavalry during the first phase of their invasion, such a state of affairs is unlikely to have persisted very long, particularly as cavalry were already increasing both in numbers and in importance elsewhere in Islam.

Certainly horsemen, or at least mounted infantry, seem to have taken an important part in Muslim raids north of the Pyrenees,¹ while the Andalusian contribution to the conquest of Sicily in 827/8 AD would also seem to have been mounted.² This trend must have been reinforced by the rapid enlistment of many indigenous warriors in Spain.³ Cultural and religious barriers had, of course, yet to rise to any significant height. As mentioned earlier, Christian rulers of the 8th century Mediterranean littoral could still feel more in common with Arabs and Berbers than with their near-barbarian, though Christian, Frankish neighbours

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1. Lévi-Provençal, Histoire de l'Espagne Musulmane, vol. I, pp. 53-65.
 2. Ibn al 'Idārī, "Al Bayān al Maḡrib," in Byzance et les Arabes, A. A. Vasiliev trans., (Brussels 1935), vol. I, p. 374; Amari, Storia dei Musulmani di Sicilia, vol. I, pp. 394-395.
 3. Sánchez-Albornoz, "El Ejército y la Guerra en el Reino Asturleonés, 718-1037," p. 301.

to the north. Hence Maurontius, the Patrician of Provence, is unlikely to have felt many ethical qualms about enlisting Muslim mercenaries against his Carolingian foes in 736-739 AD.⁴ At this time the Maghrib had yet to be fully converted to Islam and many Christian communities still flourished there in the 9th century, apparently engaged in a slave-trade between Europe and the Muslim world.⁵

Slaves from the north and Spanish captives were first enrolled as mamlūk troops in al Andalus by the Umayyad ^{al}amīr [^]Hakam I in the late 8th and early 9th centuries. Some were converted to Islam while some were not. Spanish mercenaries similarly employed by ^{al}Hakam's successors almost certainly retained their Christian faith.⁶ European mamlūks were still highly prized in the mid-10th century when they were described as heavily armoured cavalry wearing helmets, both hauberks and cuirasses, carrying spears, small shields and gilded buffalo horns.⁷ The latter item does appear somewhat later in Asturian art, but whether the rest of this equipment represented the ideal throughout Iberia is hard to say. There is, in fact, evidence to suggest that the Christian states of the north were poor in such armour, while wealthy al Andalus was known to manufacture many types of military gear. Traditions and styles were probably almost identical throughout the peninsula at this time, though with finer and more abundant equipment being found south of the religious divide.

4. Deeler, op. cit., p. 152.

5. F. E. Engreen, "Pope John the Eighth and the Arabs," Speculum, XX (1954), p. 321.

6. Lévi-Provençal, Histoire de l'Espagne Musulmane, vol. III, pp. 71-76.

7. Ibid., vol. III, p. 196.



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Such a degree of similarity is indicated, though hardly proved, in a variety of sources. These suggest that Christians and Muslims both relied on infantry plus armoured and light cavalry, some of whom carried bows as well as spears and swords in the early 10th century.⁸ Since a conscious clinging to Visigothic tradition was characteristic of Christian Asturia-Leon in the early medieval period,⁹ any such similarities in Cordova probably indicate a comparable, though of course unconscious, persistence of Visigothic tradition in Muslim al Andalus.

The northern tier of minor Christian states were not, however, homogeneous in their military styles between the 8th and 11th centuries. Asturia and Galicia were virtually cut off from the rest of Christian Europe and thus remained true to Visigothic tradition, a feature probably reinforced by contacts with similar traditions in al Andalus. Leon and Castile seem to have been superficially influenced by military developments in France, but this may only have affected their aristocratic military élites. Subsequent Castilian political and military dominance in medieval Spain would, however, make such French influences far more important. Navarre, largely being limited to the mountains even when other Christian states started to push south, remained an arena for infantry warfare throughout. By contrast, Aragon and Catalonia were to be greatly influenced by southern France after the establishment of the Carolingians' short-lived Spanish March in the 9th century,¹⁰ despite a noticeable though temporary influx

8. Sánchez-Albornoz, "El Ejército y la Guerra en el Reino Asturleonés, 718-1037," pp. 299, 301, 303-304 and 331-333.

9. *Ibid.*; Sánchez-Albornoz, "La Caballería Visigoda," p. 108.

10. Beeler, *op. cit.*, pp. 158 and 165.

of Muslim influence during the latter half of the 10th century at a time when French power was at a singularly low ebb.¹¹

To some extent such variations north of the religious divide may have been reflected among the frontier ghāzīs and muttawī^{ah} volunteers of Islam to the south.

Building upon a Visigothic foundation, the states of Muslim and Christian Spain soon developed a quasi-feudal structure. This lacked many of the essential social and economic characteristics of true European feudalism, but nevertheless produced an army in which a small élite of professional full-time warriors bore the brunt of almost continuous warfare, while the rest of male society also had a real, though occasional, military obligation. The main difference between these and European feudal armies was a greater number of non-noble cavalymen in such Iberian forces. The military capabilities of these various troops differed greatly. As in feudal Europe, the full-time aristocratic and professional élite were experienced warriors, respected by foes inside and outside the peninsula. The rest, despite being mounted, seem to have been of much lower quality, as were comparable feudal levies throughout Europe. The gradual downgrading of these levies on the Muslim side of the frontier, and their replacement by mercenaries from both North Africa and Europe, must have reinforced such an inferiority. Here, perhaps, lies one reason for the generally poor opinion in which Andalusian fighting qualities were held by other Muslims, particularly those of the tribally organized and far more broadly war-orientated

11. A. R. Lewis, The Development of southern French and Catalan Society, 718-1050, (Austin, Texas, 1965), p. 191.

Maghrib.¹² Of course, religious enthusiasm could build big armies, but these were again inexperienced, consisting of muttawī'ah who served for only one campaign. Frontier fighting, in which the ghāzīs participated on a much more long-term basis, was, however, an entirely separate issue. Medieval Spain may indeed have been "a society organized for war," but it was organized for internal conflict. In such struggles the effectiveness of its organization, experience and equipment were rarely tested against equally warlike neighbours north of the Pyrenees and south of the Straits of Gibraltar.¹³ Even as early as the 8th century, Muslim forces from al Andalus fared far better against similarly organized Christian Spaniards and southern French than against the Franks of northern France.¹⁴

Even within Spain such forms of military organization were not notably successful. Once a frontier was established in the late 8th century, very little territory changed hands for three hundred years. Warfare was generally a matter of raid and reprisal in which large-scale levies generally proved ineffective in the face of far fewer professional troops.¹⁵ The most important development occurred at the very start of this static period when the kingdom of Asturia-Leon seized the plains north of the river Douro, thus enabling its Visigothic tradition of cavalry to be revived and its armies once again to mirror those of Muslim

12. Gabrieli, "Gli Arabi in Spagna e in Italia," p. 711; Lévi-Provençal, Histoire de l'Espagne Musulmane, vol. III, pp. 67-68.

13. L. Lourie, "A Society Organized for War: Medieval Spain," Past and Present, XXXV (1966), passim.

14. Lewis, The Development of Southern French and Catalan Society, 718-1050, pp. 29-30.

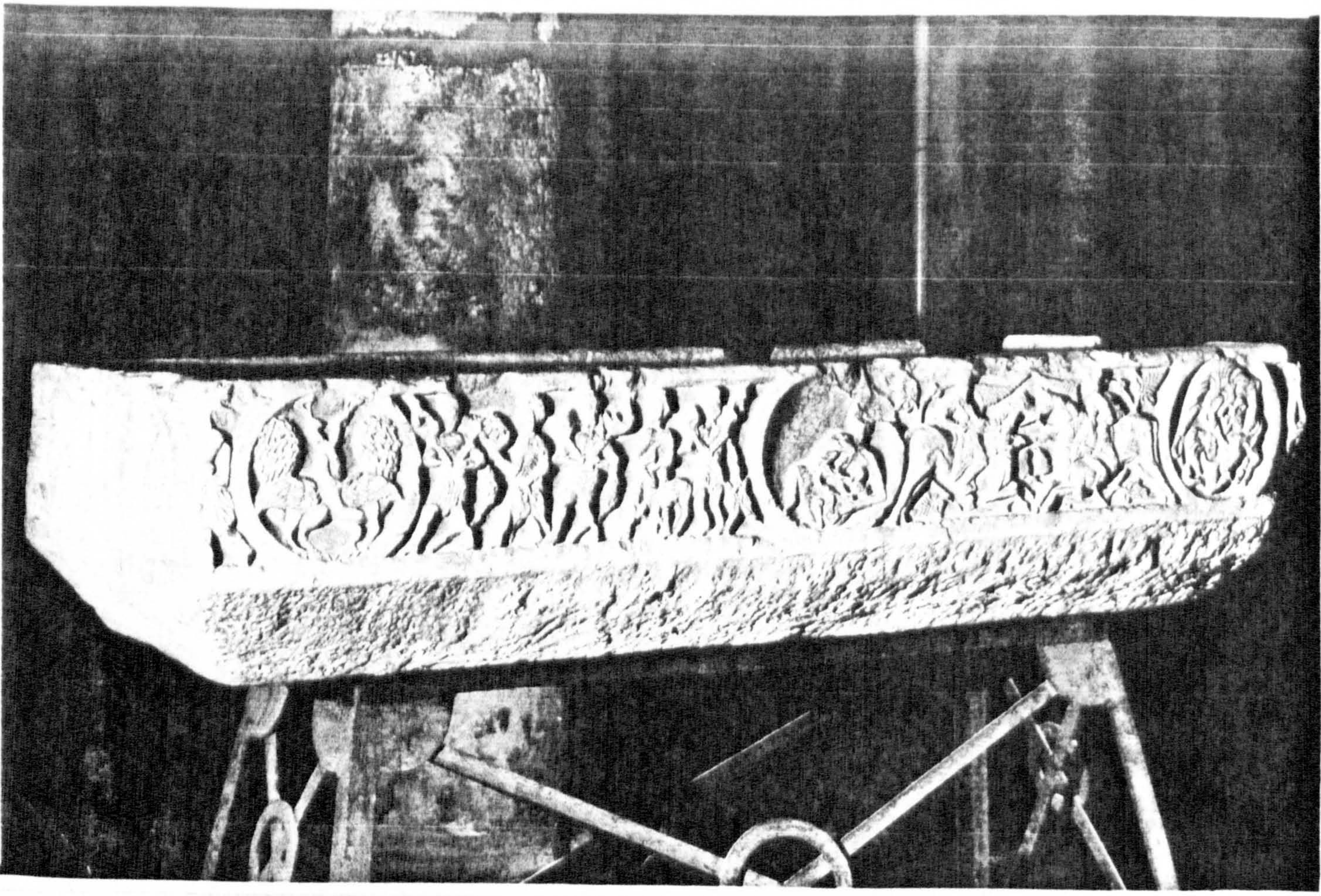
15. Beeler, op. cit., p. 162.

al Andalus. A comparable revival of cavalry among the Christian states of the Pyrenees did not occur until the plains of the Ebro were reached in the 11th and 12th centuries. It was then, of course, that the cavalry styles of France rather than those of a distant Visigothic past were to come to the fore.¹⁶

Such developments can, to some degree, be traced in the art of the peninsula. One might almost see a celebration of the revival of Asturo-Leonese cavalry in mid-9th century Christian sources (Figs. 502 and 503). The warriors shown here seem to have virtually nothing in common with their co-religionists in the rest of Europe. They may, however, be very similar to those of al Andalus who first appear in the art of the 10th century (Figs. 494 and 507). Other art illustrates warriors who may be Christian or Muslim, and were probably equipped like both (Figs. 504 and 507). Infantry are as similar, and as common, in the surviving art of the 10th century (Figs. 495, 496, 504 and 506-509), and are equally divorced from the rest of Europe.

Despite the fact that its Visigoth legacy gave the Iberian peninsula a head-start in matters of cavalry, it soon seems to have been overtaken by developments elsewhere in the Muslim world. In fact, al Andalus may have stagnated, clinging to the riding styles and equipment of the Visigoths whereas the eastern Islamic regions adopted newer styles from Central Asia. Even taking into account the tendentious nature of Ibn Hawqal's descriptions of Umayyad Cordova, the cavalry of Umayyad Spain do seem to have been slow to adopt the stirrup and the flared saddle. Many continued to ride without stirrups, using flat saddles that were

16. Ibid., pp. 165-166.



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little more than padded saddle-cloths.¹⁷ Such styles are, of course, also known to have persisted in the Berber Maghrib. Flat saddles, true saddles, a lack of stirrups, leather or rope loop and true stirrups all appear together in the art of the period (Figs. 496 and 507). This might indicate that Ibn Hawqal was merely exaggerating a real backwardness in both parts of the Iberian peninsula.

Such backwardness did not, however, apply to the horse's bit. Throughout Spain the curb bit, which gave a rider far greater control over his animal, was probably in widespread use from at least the 10th century. It had been known since the 8th (Figs. 492 and 493) when it was almost certainly introduced either by the Muslims themselves or by traders from the Maghrib who immediately preceded them. Adopted by the Byzantines in the 10th century, it was not known in western Europe outside Spain and Sicily until the 11th century and not widely adopted until the 12th.

While there was a definite lack of metallic armour and helmets in the Christian north,¹⁸ this was not so true of al Andalus. Yet even here only a full-time élite, or the dedicated frontier ghāzī, was likely to have worn full helmet and hauberk in the 10th century (Figs. 494 and 507).¹⁹ On the other hand armours of felt or buff-leather,²⁰ and even possibly quilted armour, may not only

17. Ibn Hawqal, Kitāb Sūrat al Ard, p. 113.

18. Sánchez-Albornoz, "El Ejército y la Guerra en el Reino Asturleonés, 718-1037," p. 334.

19. Al Turtūshī, Sirāj al Mulūk, pp. 303-304; Ibn Haiyān, "Muktabis," F. Codera trans., in Sánchez-Albornoz, "Ejército y la Guerra en el Reino Asturleonés, 718-1037," pp. 334-335.

20. Gabrieli, "Gli Arabi in Spagna e in Italia," pp. 709-711; Lévi-Provençal, Histoire de l'Espagne Musulmane, vol. III, pp. 90-112.

have been common but have remained fashionable well into the 13th century. Such armours are notoriously difficult to identify, even in the most detailed art, but they may be shown in some Iberian sources. This judgement is based firstly on the raised and apparently stiff collars of some tunics (Fig. 506) and secondly on the very heavy, though similarly cut, appearance of others (Fig. 495). Possible helmets are almost as rare (Figs. 494, 504 and 506). The small shield or buckler seems, however, to have been used by all troops, though cavalry, when fighting with the spear, may have either abandoned it or have slung their shields on their saddles (Figs. 504 and 507). This was normal in most Muslim countries at the time. A large round shield of the style normal among European barbarian infantry is carried by two unique horsemen in a 9th century Spanish manuscript, but with such shields and heavy spears they may have been mounted infantry (Fig. 502).

Another weapon that appeared in 10th century Spain was the long-hafted mace which, although known in 3rd century Rome, continued to be used in the Middle East before re-emerging in those parts of Europe that were under the strongest Muslim military influence (Figs. 504, 507 and 559).

The period from the 11th to 13th centuries saw a series of major changes in the military technologies of both al Andalus and the Christian states of Spain. Indigenous Andalusian traditions certainly survived, but they were in many ways swamped beneath a massive tide of southern French influence. This was, incidentally, a period when that class of professional, rather than strictly feudal, warriors from the French Midi, the new milites, played an increasingly important role in the Christian Reconquista.²¹

21. Louis, The Development of Southern French and Catalan Society, pp. 382-383.

Such a tide of influence followed a steady shift in the balance of power away from Muslim al Andalus towards the expanding Christian state of Castile. There were, of course, also a series of Berber waves of mercenaries and conquerors washing into the peninsula from the south.

The most obvious French impact on tactics was the adoption of a relatively straight-legged riding position with a high saddle having a raised, protective pommel and a supporting cantle.²² Neither Muslim al Andalus nor Christian Spain ever took these developments to the extremes seen elsewhere in western Europe, despite the astonished remarks of certain observers from other parts of the Muslim world. Nor was such caution towards these innovations necessarily a disadvantage, for the light cavalry of Catalonia proved quite capable of coping with its heavier French foes in the early 13th century.²³

This importation of French fashions also had other results. Such large numbers of Christian horsemen, noble and non-noble, experienced and otherwise, could hardly be expected to achieve the standards of discipline normal among the by now largely professional and mercenary Muslim forces. In fact, the Spaniards were regarded as notably undisciplined and disorganized.²⁴ Nor were their horses trained to withstand the terrifying roar of Murābitīn drums,²⁵ while even they themselves seem to have admitted that in persistent guerilla warfare along the frontiers, Muslim ghāzīs were hardier

22. Hoffmeyer, Arms and Armour in Spain, vol. I, p. 140.

23. Lourie, op. cit., p. 73.

24. Beeler, op. cit., p. 172.

25. Moraes-Farias, op. cit., p. 817.

and more effective than their own men.²⁶ While Catalonia, Aragon and Castile equipped numerous cavalry in heavy armour and trained them to fight with a couched lance à la brida, a great many more horsemen, particularly in Leon, still seem to have fought in the traditional style as unarmoured light cavalry à la jineta, with only helmets, shields and lances.²⁷

A comparable development was taking place in al Andalus, though at first only an élite minority were influenced by these new French tactics and equipment. Such an élite would naturally be reflected in the courtly poetry of Muslim al Andalus, and in the 11th century courts and poets were things this country had in abundance. The élite clearly fought in mail and scale hauberks of various types, with swords, assorted shields, mail coifs hiding most of the face, and helmets large and small. In fact, the only feature about such cavalry that set them apart from those of Europe was the fact that some still carried a bow in traditional Arab style²⁸ (Figs. 511 and 517). Above all there was the adoption of the heavy spear or ganāh by Andalusian cavalry.²⁹ With it, presumably, came a European style of lance-play. Earlier, in the east, this ganāh had been an infantry pike, but it was now seen in the hands of horsemen in al Andalus before being so seen in North Africa or the Middle East.

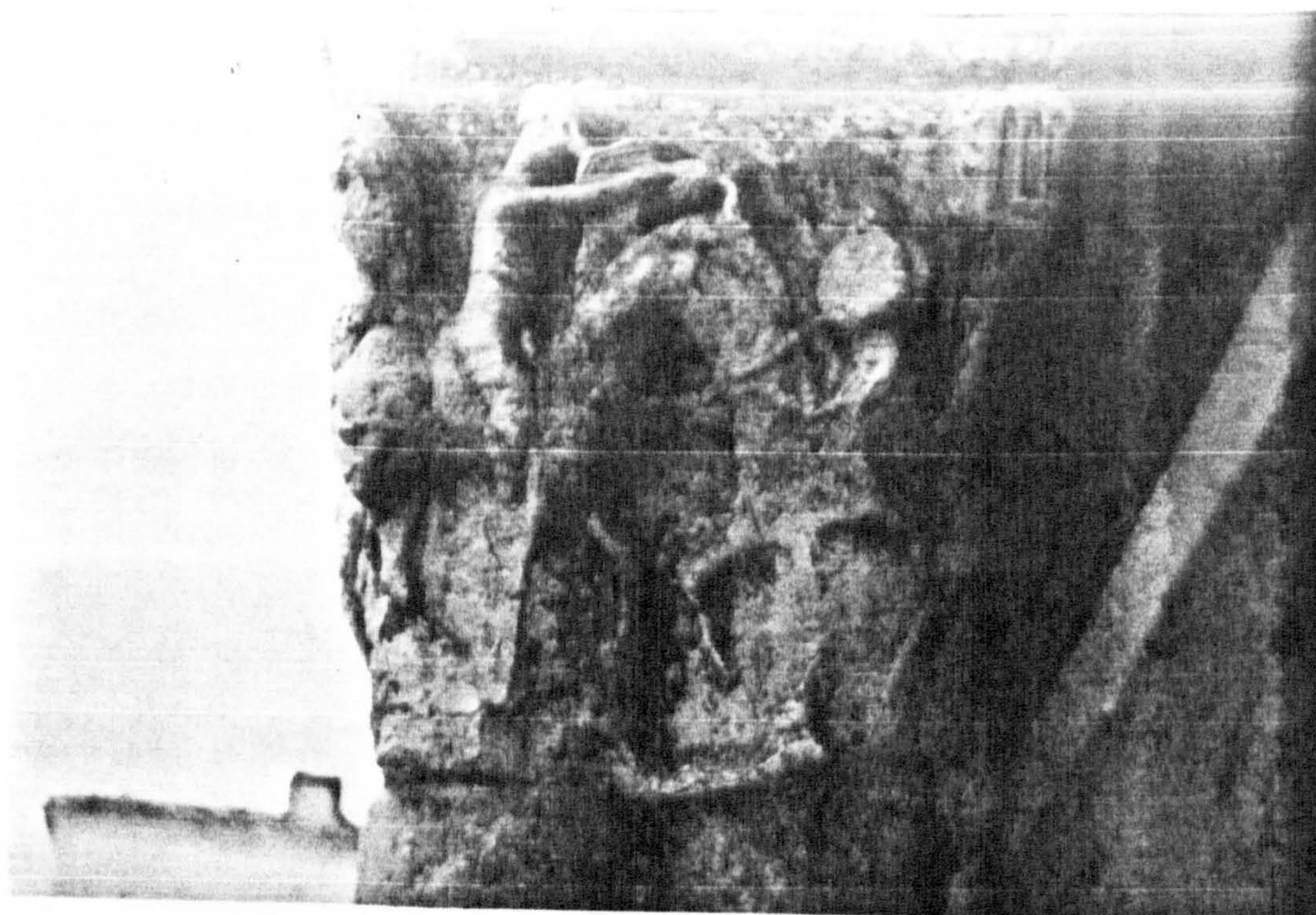
Another distinctly European fashion was the wearing of a mail hauberk as a top layer of dress. This was also noted by one

26. Lourie, op. cit., pp. 68-69.

27. Ibid., pp. 57, 68-69.

28. H. Pérès, Poésie Andalouse en Arabe Classique, (Paris 1953), pp. 350-359.

29. Monroe, op. cit., passim.



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Jewish poet of the 11th century, himself a member of a courtly elite in this age of the Reyes de Taifas.³⁰ In North Africa and the Middle East, however, it was apparently more normal to hide a hauberk beneath a surcoat or burūd.³¹

Such mail hauberks, with or without mail ventails across the face, do appear in northern Spanish illustrations of "enemies," and in Mozarabic art worn by both infantry and cavalry (Figs. 499, 515 and 517). The majority of Andalusian, and indeed of Spanish, cavalry would still not have owned hauberks. They might, however, have worn felt or leather armour of a style similar to that seen in the 10th century (Figs. 497, 499, 511 and 514). One such armour is almost certainly worn by a foot soldier in a Mozarabic manuscript from this period. Here it seems to be made of large pieces crudely stitched together (Fig. 517). Yet these illustrated sources remain far from clear. Others, which may show Andalusian warriors, almost certainly illustrate unarmoured light cavalry, although even here a hauberk could be hidden beneath another garment in a style fashionable elsewhere in Islam (Figs. 498 and 510).

The most unambiguous description of a mail ventail across the face in the late 10th century unfortunately refers to a Christian.³² A more poetic but less specific description by the poet-king al Mu^ctamid concerns a Muslim warrior during the battle of Zallaca in 1086 AD. Here a face-covering miḡfar was worn

30. Samuel Ha-Nagid, "The Victory over the Beni Abbad," in The Jewish Poets of Spain, D. Goldstein trans., (London 1971), p. 62.

31. Muhammad ibn Hānī' al Andalusī, Tabyīn al Ma^cānī fī Sharkh diwān Ibn Hānī', Zāhid ^cAlī edit., (Cairo 1934), vol. I, pp. 686-687.

32. Al Ṭurṭūshī, op. cit., p. 309.

with a dir^c.³³

This process of Frenchification seems to grow even more pronounced, and was certainly better illustrated, in the 12th century. To varying degrees it influenced the entire Iberian peninsula and was, above all, a result of Castilian military and political dominance.³⁴ It may also have been reinforced, even in areas under Murābiṭīn control, by a recruitment of French and Catalan mercenaries as élite guardsmen.³⁵ In Muslim al Andalus, where indigenous military institutions survived almost untouched under a layer of Berber, Murābiṭīn and Muwahḥidun political control, the influence of Castile was similarly apparent.

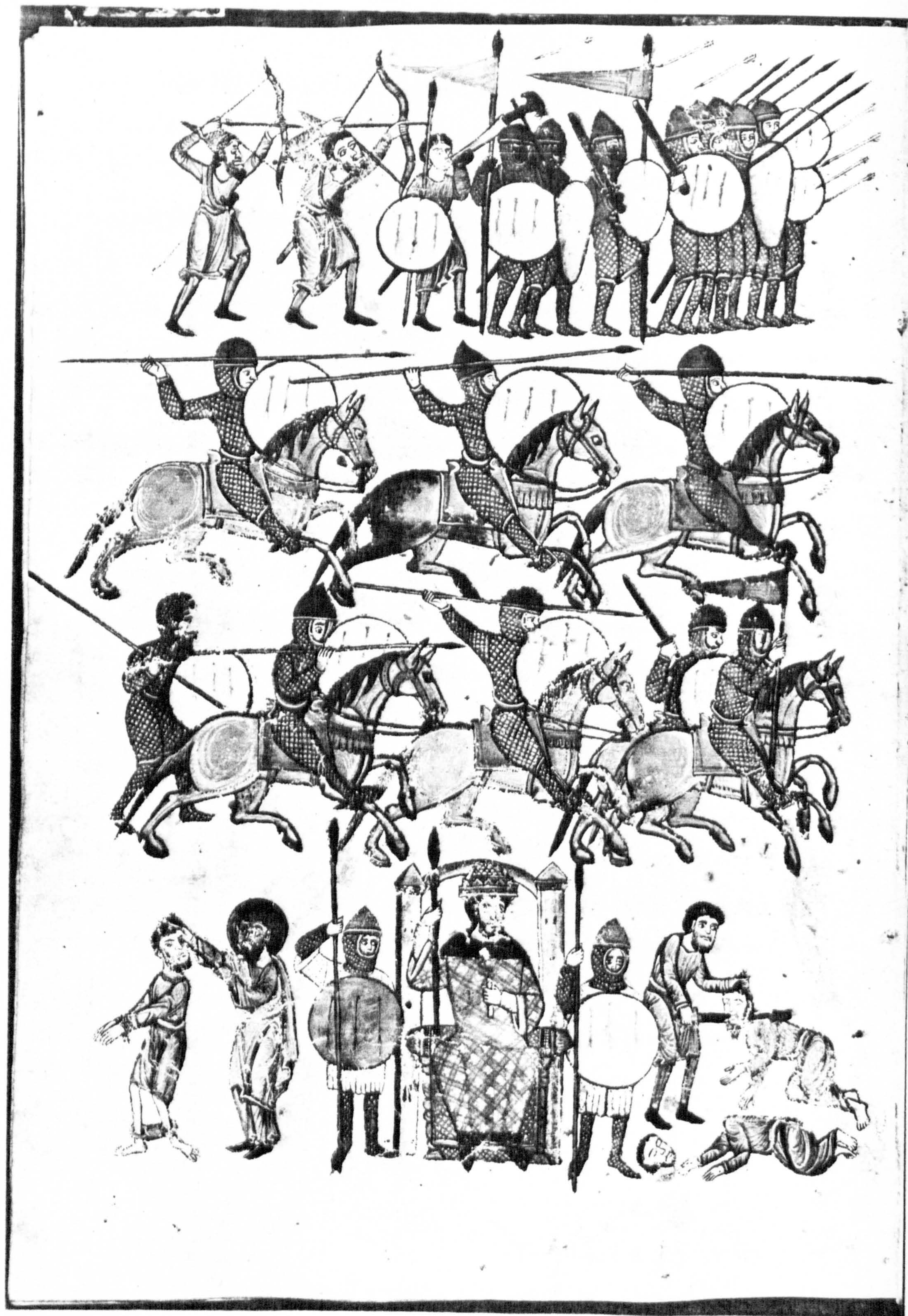
In the 12th century such a survival managed to preserve a political form in Hūdīd Saragossa. Being the nearest neighbours and persistent antagonists of Christian Navarre, Aragon and Barcelona, these Hūdīds are likely to have provided the inspiration for many "enemy" figures in various works of early 12th century art (Figs. 521 and 530). Comparable "enemy" figures from other parts of Christian Spain suggest that essentially European style cavalry and infantry were to be seen in all sections of the Muslim frontier, though with certain specifically Iberian characteristics such as mail ventails and fixed visors (Figs. 519, 520, 522-525, 536-538 and 540).

Unfortunately, the Arab-Andalusian poets of the 12th and 13th centuries are not very specific when referring to arms and armour. Rather they drown their subjects beneath a flood of poetic allusion.

33. Pérès, loc. cit.

34. Beeler, op. cit., p. 168.

35. Lévi-Provençal, Histoire de l'Espagne Musulmane, vol. III, pp. 71-76.



The sudden collapse of Iberian Islam in the 13th century seems, however, to have inspired a good deal of soul-searching and analytical writing in the following years. These later sources do give a very clear impression of Muslim arms at their moment of final failure. They seem to have been an almost exact replica of those of their Christian adversaries. This perhaps partially accounts for a revulsion against the adoption of infidel habits in the 14th century.

Writing under the early Nasrids of Granada, but before this revulsion had gathered momentum, Ibn Sa'id wrote that an Andalusian horseman was heavily armoured in dir^c hauberk, carried a particularly heavy rush lance and turs shield slung, perhaps, on a guige, and rode an often armoured or caparisoned horse with a high saddle and straight-legged riding position. Ibn Sa'id's lifetime, of course, coincided with a period when even the Christian warriors of Europe had largely adopted the surcoat, perhaps having copied it from their Muslim foes in Syria. This had thereupon been re-adopted by the Andalusians.³⁶

Ibn al Khatib, writing under the early 14th century Nasrids, recalled those European styles that had, to some extent, now been abandoned by the Muslims. He described warriors who correspond exactly to those shown in various late 13th and early 14th century illustrations³⁷ (Figs. 501, 541-546, 548, 551, 552 and 659).

The Serber influence on military developments in al Andalus

36. Ibn Sa'id al Maghribi, in E. Lévi-Provençal, L'Espagne Musulmane au Xème Siècle, (Paris 1932), pp. 144-146; E. Sordo, Moorish Spain, (London 1963), p. 118; R. Arie, "Quelques remarques sur le costume des musulmans d'Espagne au temps des Nasrides," Arabica, XII (1965), p. 245.

37. Ibn al Khatib, in Sordo, op. cit., p. 136; Arie, op. cit., p. 246.

is more difficult to chart than the European since, to a great degree, it merged with surviving non-French, Andalusian traditions. Berbers had, in fact, formed the bulk of those Muslim armies that conquered Visigothic Iberia in the 8th century. Thereafter their influence seems to have been minimal. Berbers were later recruited as mercenaries, at least as early as the 9th century, though at first only for specific campaigns against the Christians of the north.³⁸ This process was accelerated in the late 9th and very early 10th centuries by the vizir al Mansūr and his son. Now, it appears, whole tribal divisions were being recruited. Yet even they would seem to have been given equipment of Andalusian style once they had been enlisted by their new leaders.³⁹ During this period the light cavalry of the dominant Zanāta and Ṣanhāja Berbers of the Maghrib also seem to have fought primarily with lances and swords, much as did traditional Andalusian horsemen.⁴⁰

The Murābiṭīn, with their reliance on infantry and their relatively short-lived occupation of the southern three-quarters of al Andalus in the early 12th century, seem to have had a minimal impact on Andalusian styles. The Muwahhidun are likely to have had more effect on military developments, as they did on other aspects of Andalusian civilization. The Berber cavalry described by Ibn Saʿīd in the late 13th century were probably Marīnid, though there is little reason to suppose that they differed from Berber horsemen serving the Muwahhid dynasty that was finally extinguished at Marrākash in 1269 AD. Few such Berbers possessed

38. Lévi-Provençal, Histoire de l'Espagne Musulmane, loc. cit.

39. Ibid., vol. III, pp. 67-68.

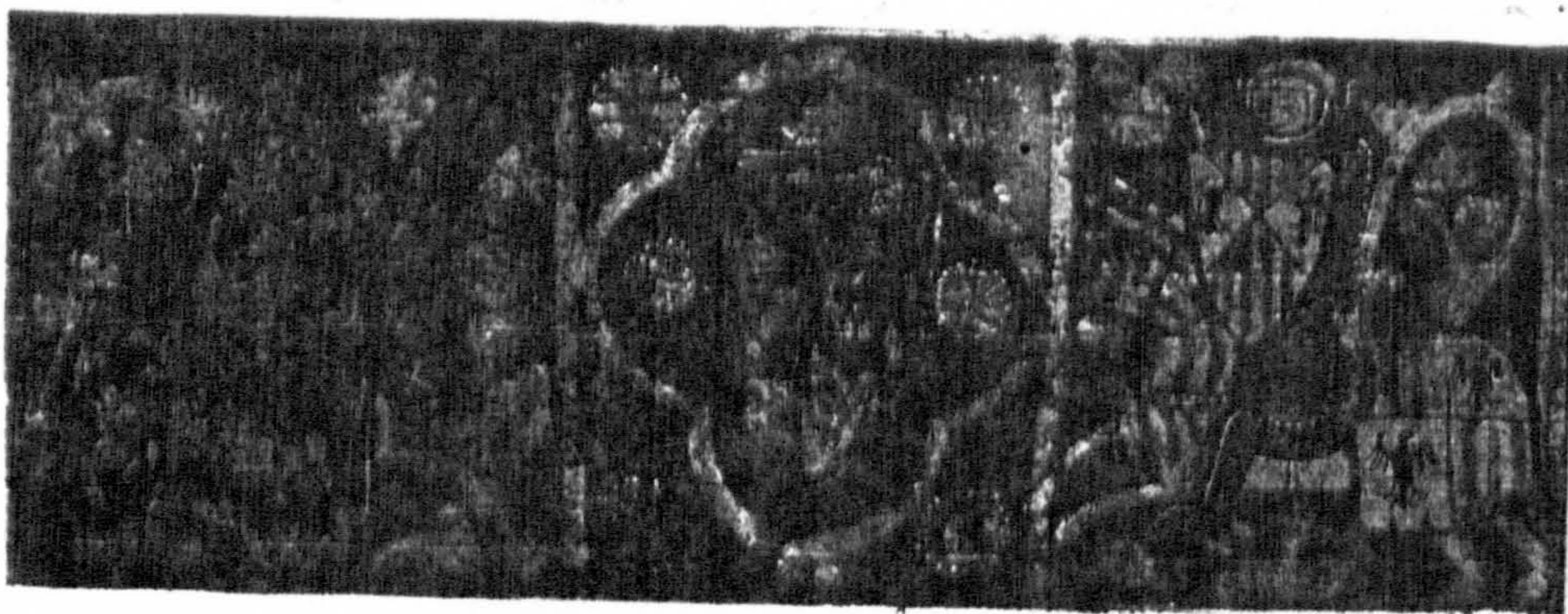
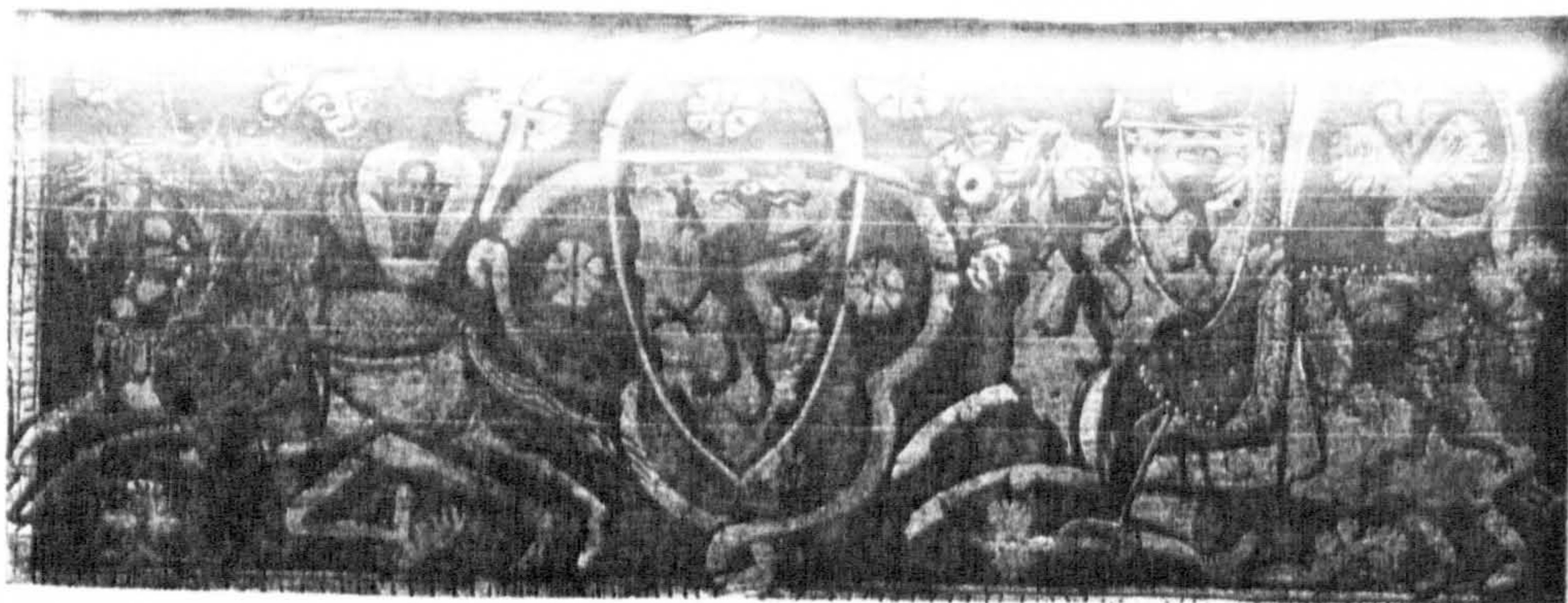
40. Ibn Darrāj al Qasṭallī, in Monroe, op. cit., pp. 148-151.

a mail hauberk. Rather they fought only with a sword, a lighter spear and a smaller leather daragah shield. They also rode lower saddles with a shorter leg position than did their Andalusian neighbours.⁴¹ Such troops appear, in fact, as frequently in late 12th, 13th and early 14th century Spanish art as do Andalusians (Figs. 532, 545, 547, 549, 551A and 659). Unfortunately, no Muslim representation earlier than the late 14th century Alhambra ceilings illustrate such military equipment (Fig. 526).

As mentioned above, it is often difficult to separate Berber influence from surviving Andalusian light cavalry and infantry traditions. The minor states of the later 11th century in al Andalus, despite the very varied origins of their ruling dynasties, still seem to have fought in traditional Muslim style. Here infantry cooperated with cavalry, and stood in serried ranks to receive the shock of an advancing foe. The combined forces of four such petty kingdoms did so at Zallaca in 1086 AD, although on this occasion the Christians broke through a part of their line and almost won the day. Identical tactics were described by al Turtūshī early in the 12th century as being normal practice "in our country." Infantry knelt with their large daragah kāmīl shields resting on the ground and their long rumh spears similarly thrust into the earth as pikes. Some also held mizraq javelins, while behind them stood archers in support. Next came cavalry who would charge at the enemy as their own infantry wheeled aside.⁴² Light cavalry were to remain equally important in Christian Spain in the 12th and 13th centuries. Heavy cavalry tended to be found

41. Ibn Sa'īd al Maghribī, in Lévi-Provençal, L'Espagne Musulmane au Xe^eme Siècle, loc. cit.

42. Al Turtūshī, op. cit., pp. 308-309.



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among a ruler's immediate retinue, the upper aristocracy and those Military Orders founded in the late 12th century in possible imitation of Muslim frontier ribāts.⁴³

Such written sources make no specific mention of archery from horseback. Bows would, however, apparently have been used in this manner, perhaps in the Arab style while at rest, by some Andalusian cavalry.⁴⁴ A number of nomadic Turkish Ghuzz horse-archers were also employed by the Murābiṭīn during their first incursion into Spain in 1086 AD.⁴⁵ Horse-archers, probably of the Andalusian variety, still infrequently appear in 13th century Spanish art, as they did earlier (Figs. 543 and 545).

Comparable heavy infantry and light cavalry are also to be found in much Spanish 12th and 13th century illustration. They appear both as Saracen foes, including the giant Faragut, and as assorted "enemies" such as Goliath and the Philistines. Among the best of these sources are the splendid Pamplona Bibles made for King Sancho of Navarre in the late 12th century when that kingdom was in close and friendly contact with Muwahhīd al Andalus⁴⁶ (Fig. 531). Similar troops are, of course, as common elsewhere (Figs. 518, 526-530, 533, 534, 543, 545 and 552).

The revolution against European heavy cavalry tactics and equipment, already noted in Nasrid written sources, was not quite so noticeable in art. Yet even those religiously committed and

43. Beeler, op. cit., p. 170; Lourie, op. cit., p. 68.

44. Pérès, loc. cit.

45. Beeler, op. cit., p. 173; Bosworth, "Recruitment, Muster and Review in Medieval Islamic Armies," p. 63.

46. F. Bucher, The Pamplona Bibles, 1197-1200 AD, (New Haven 1970), pp. 131-132.

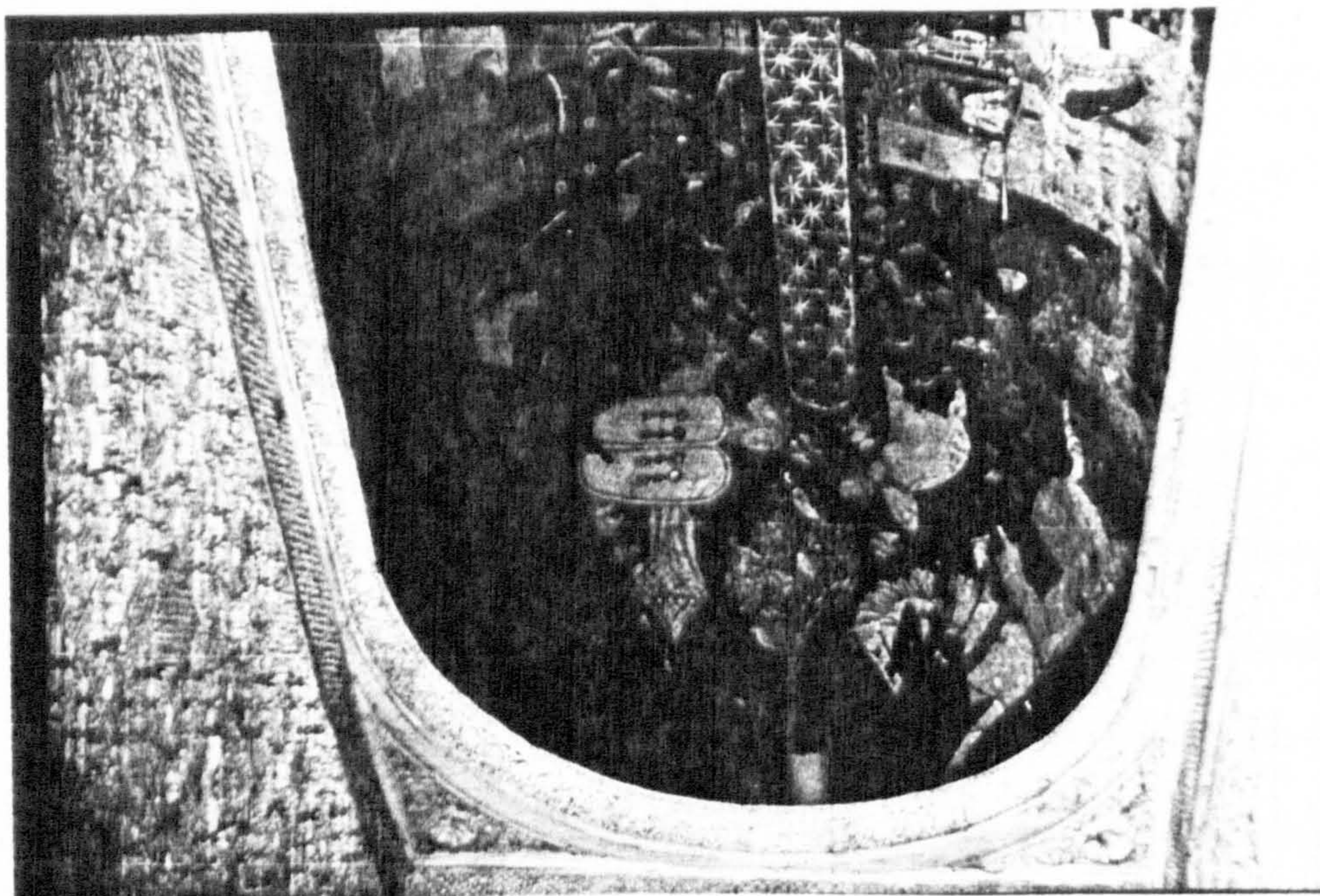
probably propagandist written works did make it clear that the army of early 14th century Granada was divided into two distinct parts, mercenary Berber and local Andalusian. The latter now used "improved" equipment, including smaller hauberks, lighter helmets, spears with narrower blades, leather *rather* than wooden shields, and rode in traditional style à la jineta rather than à la brida in the European fashion.⁴⁷ Light cavalry would also return to the Christian north during the 14th and 15th centuries and would later contribute a great deal to the success of Spanish arms in various European wars.

Such developments in Granada were not so much an adoption of Berber styles, but rather a revival of earlier Arab-Andalusian traditions. Not that there was necessarily a great deal of difference. The Marīnid army from Morocco that defeated a large Castilian force at Ecija in 1275 AD employed traditional tactics. Here the Muslim infantry spearmen and archers awaited the Christian charge before their own cavalry made a devastating counter-charge.⁴⁸ Naturally such Andalusian and North African tactics had to be modified, given the constraints of mountain warfare in Islam's last Iberian bastion. Even the popularity of the crossbow in Nasrid Granada seems to have been a sort of reversal to ancient karr wa farr repeated shock tactics. This weapon had been known in Iberia at least since the mid-11th century, and it was now used on foot and from horseback.⁴⁹ That such Grenadine troops

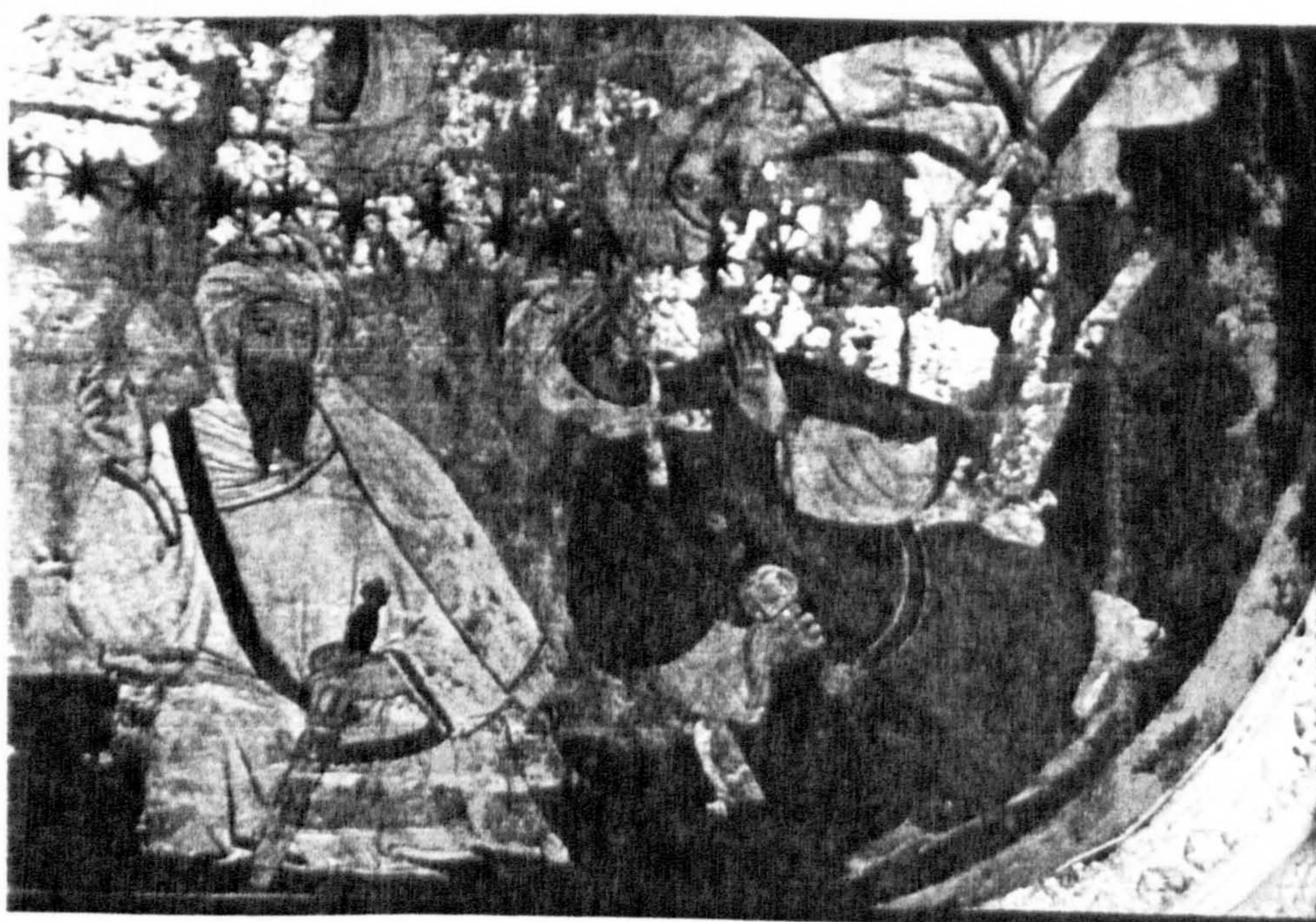
47. Ibn al Khatīb, in Sordo, op. cit., p. 136; Hameto ben Cobexi, "Espadas Hispano-Arabes," Mauretania, XV (1942), p. 136.

48. Ibn Abī Zar, A. Beaumier trans., Roudh al Qartās: Histoire des Souverains du Maghreb, (Paris 1860), pp. 454-455.

49. ^CAlī ibn Hudhayl al Andalusī, La Parure des Cavaliers et l'Insigne des Preux, L. Mercier trans., (Paris 1924), pp. 25-52.



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were both effective and different from those of the Berber Maghrib is indicated in their recruitment by the Marīnid sultans of Morocco. Again these crossbowmen were both mounted and on foot, and were also armed with tabarzīn battle-axes. Christian mercenary cavalry were similarly recruited by the Marīnids, though whether they fought à la jineta or à la brida is unclear.⁵⁰

An unsurpassed illustration of this distinctively Andalusian early 14th century army of Granada can be seen on a fresco in the Alhambra. Here the majority of troops seem to be mounted crossbowmen with quivers for quarrels fixed to their saddles. Hence they must almost invariably have shot while mounted. Others are equipped as light cavalry with spears and kidney-shaped leather daragah shields. One true horse-archer also appears, perhaps a stray mercenary from among those thousand or so Ghuzz Turks serving the Sultan of Morocco⁵¹ (Fig. 661).

50. Al ^ʿUmarī, op. cit., pp. 146-147; Ibn Fadhl Allāh al ^ʿUmarī, "Masalik al Absar," in Historiens Arabes, Sauvaget trans., pp. 131 and 135.

51. Al ^ʿUmarī, loc. cit.

CHAPTER 8

NOMAD HORSE-ARCHERY AND THE
CAVALRY OF ISLAM, 11th-13th CENTURIES

Although the traditional horse-archery of the Central Asian nomads had an influence on the Muslim world from the 8th to 11th centuries, it was relatively minor. Such a process was merely a continuation of those mutual influences that the cultures of settled Iran and nomadic Turkistān had upon one another for a thousand years. Turks entered the armies of Islam, either as mamlūks to be trained in Muslim traditions of warfare, or as mercenaries to fight alongside other warriors who used different tactics. Not since the expansion of the Parthians did a people from within the true nomadic zone have a more widespread influence. Even the Huns, despite their victories, had in reality been contained on the fringes of the settled area.

The Saljūqs, who were part of the Ghuzz Turkish people, broke this pattern by first defeating their Ghaznewid employers and then going on to take over huge areas of eastern Islam. They were not merely conquerors, however, for they were occupiers as well. With the Saljūq tribal warriors came Saljūq clans, families and flocks. Spreading across much of the land, these Turcoman nomads brought not only their own culture but also the means whereby they could replenish their own ranks over numerous generations. The Turks became, in fact, a new and self-sufficient element within the world of Islam, rather than remaining a source of recruitment from beyond the Muslim frontier.

Although the Saljūqs were to have a profound cultural and political impact on eastern Islam in the 11th century, they do



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not at first appear to have had much effect on ^{sources}pictorial/. This continued to portray a mixed cavalry armed with spears, shields, swords and bows (Figs. 363, 387 and 419). The one source that can be linked to a specific early Saljūq sultan, Malik Shāh I, shows only horses and not riders (Fig. 278).

At this stage those Turcomans who were true nomadic horse-archers still formed the bulk of Saljūq armies, and the effectiveness of their tactics is well recorded. Their arrows clearly carried a great distance.¹ This, for example, enabled them to indulge in "zone shooting", or the dropping of arrows within a designated area such as the interior of a castle.² A willingness on the part of these warriors to vary the style of their shooting according to circumstances probably accounts for some otherwise contradictory evidence. The Byzantine writer, Anna Comnena, claimed that Turkish arrows had extraordinary penetrating power,³ presumably when shot from close range, whereas various Crusader chroniclers maintained that they lacked penetrating power,⁴ presumably when used from long range to harass a marching foe or wound his horses. Unlike the later European long-bow, the Turkish composite bow may have relied on more powerful and regular tension, rather than the weight of an arrow, for its effect. The rate of shooting achieved by these nomad horse-archers was, however, agreed by all observers.⁵

Another important feature of nomad horse-archery in the 11th

1. Anon., Gesta Francorum, p. 49.

2. Faris and Elmer, op. cit., p. 132.

3. Duckler, op. cit., p. 428.

4. Smail, op. cit., pp. 80-82.

5. Ibid.

and 12th centuries was the widespread use of a nāwak or majra arrow-guide to shoot short arrows known as husbān in Arabic or jawāldūz in Persian. Such a device probably shot those "darts" which, distinguished from javelins by the anonymous author of the Gesta Francorum, were noted at the battle of Dorylaeum.⁶ Such darts were again recorded by another anonymous Frankish chronicler at the battle of Arsūf a century later. These were also almost certainly husbān.⁷ Interestingly enough, such short arrows are shown being used by a demon on one of the Nazareth capitals. Here the Christian artist, presumably lacking knowledge of just how such husbān were shot, seems to give his demon either magical powers or suicidal tendencies (Fig. 269).

It may also be worth noting that these Saljūq Turks seem to have been regarded by their Byzantine foes as more chivalrous and civilized than were west-European Crusaders.⁸ Although the Saljūq use of nomad horse-archery was very successful in battle, it rarely brought victory on its own and a final charge into close-combat was generally also needed. This would similarly be the case if the Turcomans were themselves defeated or trapped. Muslim sources concerning the battle of Manzikert in 1071 AD, which was won primarily by the professional rather than Turcoman army of the Great Saljūq sultan, describe that ruler as putting aside his bow, taking mace and sword and putting on coif and helmet before such a final charge.⁹ Crusader chroniclers agree that before coming

6. Anon., Gesta Francorum, loc. cit.

7. W. F. Paterson, "The Battle of Arsuf," Journal of the Society of Archer-Antiquaries, VIII (1965), p. 22.

8. Buckler, op. cit., p. 421.

9. C. Cahen, "La Campagne de Mantzikert, d'après les Sources Musulmanes," Byzantion, IX (1934), p. 634.

to close combat the Turks put their bows aside, though by hanging these weapons on their shoulders rather than using bow-cases they seem to identify themselves as mamlūks instead of nomadic Turcomans. Such warriors would then take mace and sword, perhaps also throwing their light lances as javelins before a final shock.¹⁰

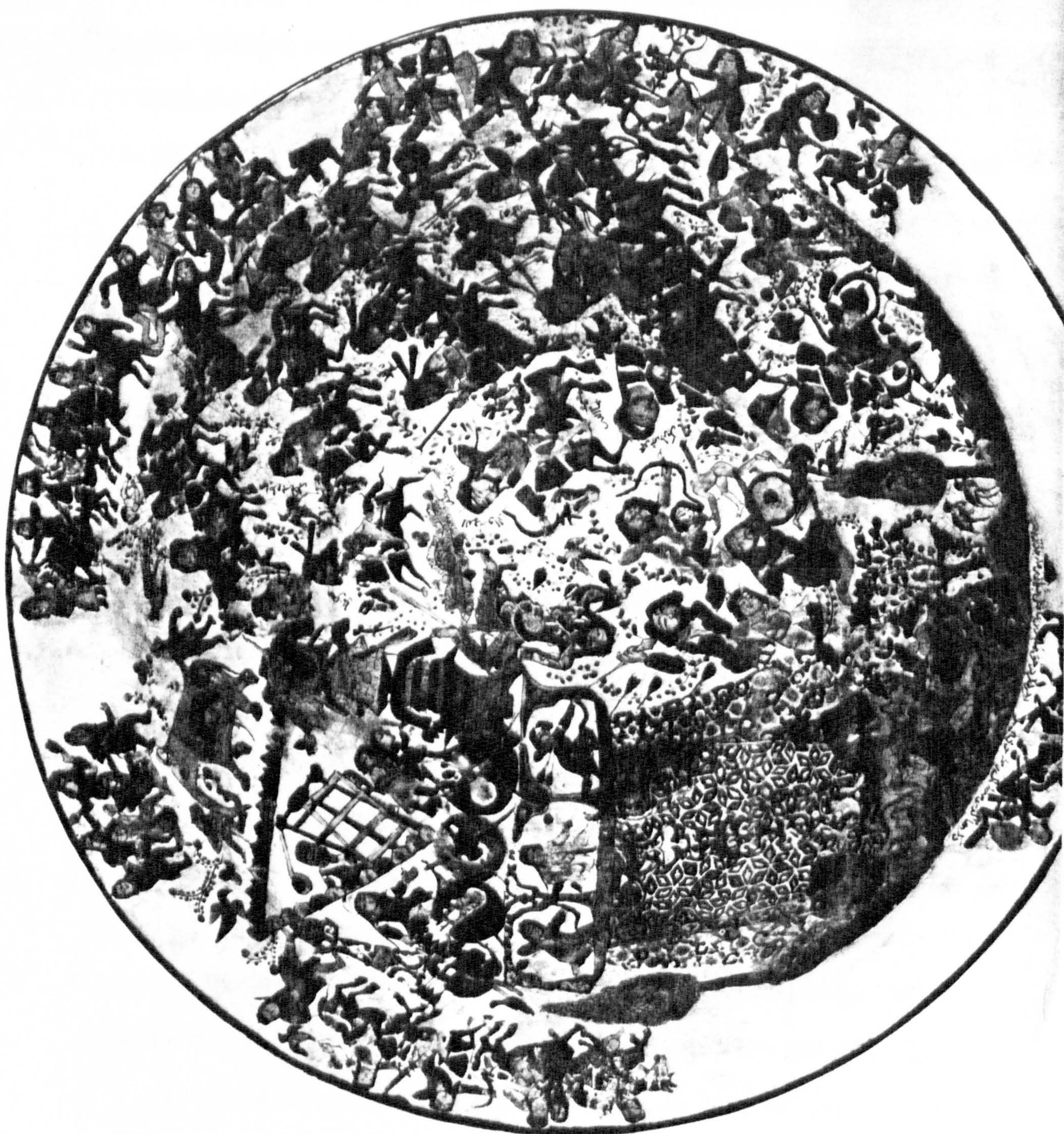
By this time, of course, the nomadic Turcomans had largely been relegated to the frontier zones because they had proved as politically turbulent to their Saljūq leaders as had the Arabs to the 'Abbāsid Caliphs before them. In such frontier regions, which included Anatolian Rūm and at least the mountainous Taurus stretch of the new Crusader frontier, these Turcomans continued to use their martial energies as ghāzis.¹¹

The state established by the Saljūqs of Rūm in Anatolia was originally such a Turcoman ghāzī province. Soon, however, the Saljūqs of Rūm threw off any real allegiance to the Great Saljūqs of Iran and established a dynasty of their own which long outlived that of their eastern cousins. They in their turn then tried to push the true Turcomans into a troubled frontier belt even further west, between Byzantine and Saljūq territories. Meanwhile, they themselves built a professional army similar to that of other Middle Eastern Muslim states. Nevertheless, Turcoman warriors remained more important in Anatolia than elsewhere, although the Sultan's force of Greek slaves and captives converted to Islam, plus foreign mercenaries from east and west and local Muslim ikdīsh militias of mixed ethnic origin, grew in importance throughout the 12th and early 13th centuries.¹² The varied

10. Smail, op. cit., pp. 82-83.

11. Cahen, "Djaysh," loc. cit.

12. T. T. Rice, The Seljuks, (London 1961), p. 81.



character of these armies is apparent in the art of both the Saljūqs of Rūm and their immediate neighbours to the east, the Dānīshmandids (Figs. 252-256, 260-262 and 264).

The cultural and military impact of these Turks upon their Christian neighbours is also apparent. It is seen, for example, on a coin from late 13th century Georgia (Fig. 426). Correspondingly, the influence of such long-established Christian states, including Byzantium, is equally obvious in the organization and tactics of the new army recruited by the Saljūqs of Rūm in the late 12th and early 13th centuries. A warrior's training in horsemanship, archery and fencing, added to the fact that an élite were creamed off as horse-archers while the rest continued to train in spear and sword, seems to reflect traditional Muslim customs.¹³ Tactics reverted to Middle Eastern tradition rather more slowly. In defeating the Byzantines at Myriokephalon in 1176 AD, for example, the Saljūqs of Rūm still relied primarily on Turcoman tactics. Yet at Erzinjan in 1230 AD when, in alliance with the Ayyūbids of the Jazīrah they defeated the Khwarāzmshāh, and when they themselves were defeated by the Mongols at Kōse Dagh in 1243 AD, the Saljūqs of Rūm fought in a traditional, almost Byzantine and certainly non-Turcoman, style.¹⁴

In fact, there is every reason to suppose that influences were mutual in the cultural melting pot that was Anatolia. Despite clashes, such as that at Myriokephalon, relations between the Saljūqs of Rūm and the Byzantines were generally amicable. Whereas the Saljūqs recruited many ex-Byzantine prisoners and also Greek mercenaries, the Byzantine Emperor recruited captured Turks and

13. Rice, The Seljuks, loc. cit.

14. Cahen, Pre-Ottoman Turkey, pp. 230-234.

Arabs, among others, plus "allied" contingents from various Saljūq and non-Saljūq rulers of Anatolia.¹⁵ Horse-archers of apparent Turkish origin were clearly commonplace to many Byzantine craftsmen in the 12th century (Figs. 233-235). They, or perhaps their distant Pecheneg cousins, were also known to the illuminators of 13th century Serbia who could place them among other heavy cavalry of obvious Byzantine inspiration (Fig. 634).

Traditional Turcoman styles persisted among nomadic Turkish tribes in many parts of Anatolia and are well described in the probably late 13th anonymous Book of Dede Korkut. Here equipment included many-coloured shields, swords, long-pointed lances, long mail hauberks, helmets, bows and arrows, quivers, daggers and, judging by their noise, iron lamellar cuirasses.¹⁶

Saljūq influence did not, however, mean a revival of horse-archers in Byzantine armies, except for those provided by Turkish mercenary or allied corps. By contrast there was, in fact, an emphasis on lance-armed cavalry of rather European, almost Frankish, style. This perhaps reflected a loss of the Empire's main Anatolian recruiting grounds and the necessity of relying on the only type of cavalry now available to combat the various threats facing Byzantium.¹⁷ Most frontier regions, east and west, were for a variety of reasons heavily depopulated in the 12th century. The depression of much of the free peasantry into servitude also hindered internal recruitment and all these reasons conspired

15. Chalandon, Les Comnènes, Études sur l'Empire Byzantin, vol.II, pp. 611-613 and 617.

16. Anon., The Book of Dede Korkut, pp. 92, 94, 145, 157 and 166.

17. Chalandon, Les Comnènes, Études sur l'Empire Byzantin, vol.II, p. 237.

to force large numbers of foreign mercenary troops upon Byzantium.¹⁸ Cavalry, mercenary or indigenous, seem to have been divided into light and heavy, the former perhaps being horse-archers of Turcoman or Pecheneg origin. The latter certainly rode larger Arab or Hungarian horses, wore mail hauberks, helmets laced to coifs, and fought with lances, maces and swords while carrying large kite-shaped shields.¹⁹ Various 12th and 13th century illustrations from Byzantium and culturally related peripheral areas such as Bulgaria, Cyprus, Serbia and the Crusader states, show the development of a heavy cavalry whose equipment was akin to, though distinct from, that of western Europe (Figs. 226, 227, 229, 231, 232, 236, 271, 275 and 634).

While the Turcomans of Rūm were downgraded in the face of Byzantine influence, those of Iran and the Fertile Crescent enjoyed an even briefer era of political and military supremacy. The huge realm of the Great Saljūqs started to fragment even before the end of the 11th century, before, in fact, the Crusaders appeared in the Middle East. Although this dynasty retained control of parts of Iran and Iraq until the late 12th century, larger areas fell to various successor dynasties. These did, however, generally continue the Saljūq system within their armed forces. Yet it would already be quite wrong to see such Saljūq military traditions as Turcoman. Saljūq forces were early divided into two distinct parts, a small professional askar of mamlūks or mercenaries who owed allegiance to whichever ruler or local governor recruited them, and a larger element of tribal auxiliaries of whom the Turcomans were the most effective element. While the askars

18. Ibid., vol.II, pp. 611-618.

19. Ibid., vol.II, pp. 619-620.



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formed a standing army of cavalry and infantry, garrison troops and personal guards, the auxiliaries would only be called upon for a specific campaign.²⁰ That this process started soon in the history of the Saljūq state may be inferred from the fact that the Great Saljūq Sultan, Tughril Beg, was using siege engines as early as 1054 AD during his first unsuccessful attack on Manzikert.

The varied equipment of a Saljūq regional askar is probably illustrated on an early 13th century carved gateway from Sinjār (Fig. 280). Other sources which may also illustrate professional askariya are to be found in 12th century Iran (Figs. 367, 368, 370, 371, 374 and 381-383). The best description of Saljūq equipment, in this case probably referring to 11th or 12th century Turcomans rather than to an askar,²¹ is to be found in the romance of Marka wa Gulshāh. Here the weapons include javelin, spear, sword, bow, mace and lasso, while armour is comparably heavy, including helmet, coif or aventail, and full hauberk.²² The late 12th century illustrations of this Marka wa Gulshāh manuscript correspond in most points to its slightly earlier text (Fig. 422). Such equipment is mirrored, either exactly or with minor variations, in other Iranian and neighbouring sources (Figs. 377, 378, 385, 424 and 425).

Of all those atabaq, or "senior officer", successor states that inherited so much of the crumbling Saljūq empire, that of the 12th and 13th century Zangids of Syria and the Jazīrah was perhaps the most active. In the history of the Crusades such names as Imād al Dīn Zangī and his son Nūr al Dīn Maḥmūd loom very

20. Small, op. cit., pp. 66-67.

21. Ayyūqī, op. cit., pp. 5-6, 21-23 and 29.

22. Ibid., pp. 38-39 and passim.

large indeed. The Zengids, of course, had to recruit from a more limited area than had their Saljūq predecessors. The same may be said of *their* Būrid and Artuqid rivals in Damascus and Diyar Bakr respectively. This was certainly reflected in their armies. In 1126 AD a force from Damascus even used the old ^cAbbāsīd tactic of having each cavalryman carry a foot soldier into battle on his horse's crupper.²³ Some decades later the army of Nūr al Dīn would, judging from the origins of its senior men, have largely consisted of Turcomans and Kurds, horse-archers and heavy cavalry respectively, plus ghulāms trained in traditional style.²⁴

Large numbers of auxiliary cavalry were also recruited from the Arab bedouin tribes.²⁵ Similarly, many Turcomans such as those of the Yaruqī tribe, who were invited to the Aleppo region in the mid-1120s, could be regarded as auxiliaries.²⁶ At this time such Turcoman tribes were, to all intents and purposes, outside Muslim civilization though living within the world of Islam. Like those German barbarians who earlier took over the western regions of the Roman Empire, these Turcomans retained a separate legal system of customary law. This yāsa, as it was known, was not officially abandoned until Nūr al Dīn obliged his Turkish military élite to adhere to Muslim law,²⁷ and such a situation was bound to help preserve the Turcomans' separate

23. Small, op. cit., p. 76.

24. Elisséeff, op. cit., pp. 722 and 729.

25. Ibid., p. 730.

26. Ibid., p. 722.

27. A. N. Poliak, "The Influence of Chingiz-Khān's Yāsa upon the General Organization of the Mamlūk State," Bulletin of the School of Oriental and African Studies, X (1942), pp. 862-863.

identity in military, as in other, matters.

Certain Turcoman tactics similarly persisted even in the professional askars of various minor dynasties around the Fertile Crescent. When facing regular armies not comparably trained to use nomadic horse-archery techniques, this meant a constant harassment of the foe until he was so disorganized or demoralized that a final decisive charge could conclude the struggle. This the Zangids and others used against the Crusaders, although they were also occasionally prepared to meet their foes in a set-piece battle of organized ranks and, of course, to engage in siege warfare.²⁸ Another fundamental tactical change that might betray Turkish Saljūq influence was the placing of cavalry ahead of infantry as an army marched through hostile territory.²⁹ In earlier centuries the reverse appears to have been the case.

As far as the general equipment of cavalry in atābeq Syria and the Jazīrah was concerned, the poetry of the period may, because of an inherent conservatism, tend to reflect surviving Arab and perhaps Kurdish elements rather than the newly arrived Turcomans. Certainly there is much more emphasis on swords, turbans, tark helmets, rumh and qanāh spears, than upon bows in such verses, though the latter are, for example, mentioned in connection with Nūr al Dīn's army.³⁰ The same is very much the case in the art of atābeq Syria and the Jazīrah (Figs. 270 and 281-283).

However real such a traditional, non-Turcoman, character might have been of certain atābeq states, it was certainly true

28. Smail, op. cit., pp. 78-80; Elisséeff, op. cit., pp. 740-743.

29. Elisséeff, op. cit., p. 738.

30. Ghalib, op. cit., pp. 34, 43, 89, 106, 125-126 and 157.

of Arab Shayzar in the early and mid-12th century. In his memoirs, centred upon this castle, Usamah ibn Munqidh listed a horseman's equipment as a kazāqhand fabric-covered mail haubergeon, a khūdhah helmet, a sword slung from a baldric, a rumh spear and a tura shield.³¹ The importance of the lance is also made clear by Usamah elsewhere. For example, he devoted several pages to notable lance thrusts and explains that horsemen particularly feared to turn their backs on a foe armed with a spear. Horsemen also feared a lance if they themselves had only swords. Other warriors he recorded as using compound lances of exceptional length.³² Usamah further indicated that the Frankish couched-lance technique was known, though not necessarily widely used, by the Muslims.³³ A somewhat garbled description of such lance technique, using a relatively short quntārīyah weapon with a broad blade, appears in al Ṭarsūsī's treatise on military matters. This was written for Ṣalāḥ al Dīn about the same time as Usamah wrote his memoirs.³⁴

Ṣalāḥ al Dīn began his career as Nūr al Dīn's governor in Egypt. With the death of the last Fāṭimid Caliph of Cairo in 1171 AD, however, he not only changed the official faith of the country from shīʿī to sunnī Islam, but set about recruiting a new army loyal to himself rather than to the memory of the Fāṭimids or to Nūr al Dīn and the Zangids. Such considerations necessitated Ṣalāḥ al Dīn recruiting from an even wider spectrum than was normal. He had inherited a Fāṭimid force that included many thousands of Armenians, Sudanese and Arabs, both regular and

31. Usamah, op. cit., p. 85.

32. Ibid., pp. 41, 48-50, 76-78, 87, 90, 92 and 131.

33. Ibid., pp. 41-42.

34. Al Ṭarsūsī, op. cit., p. 113.

auxiliary, plus Kurds, ghulāms and Turcomans brought to Egypt by Ṣalāḥ al Dīn's uncle during the Zangid takeover.³⁵ As his power grew, however, Ṣalāḥ al Dīn downgraded, destroyed or disbanded most of the Fāṭimid forces but retained those Zangid troops who were willing to be loyal to him rather than to Nūr al Dīn. He also continued to recruit an increasing number of free Kurdish tawāshī heavy cavalry, Turcoman horse-archers and mamlūk-ghulāms. As Ṣalāḥ al Dīn gradually took control of most of Syria and the Jazīrah, he incorporated the mixed forces of these areas into his own loosely knit army, to which the ahdāth militias, muttawī^{ca}ah volunteers and Arab bedouin auxiliaries of these regions could also be added.³⁶

Crusader chronicles, or at least those who have interpreted them, tend to overemphasize the admittedly picturesque if not spectacular role of Turcoman horse-archers in the armies of Ṣalāḥ al Dīn and his Ayyūbid successors. These troops seem, however, to have played a relatively minor role in the warfare of Egypt and the Fertile Crescent in the late 12th and early 13th centuries. In fact, they seem to have degenerated into one of two sources of auxiliary cavalry, the other being the bedouin Arabs. The most successful role for such Turcomans may now have been as raiding troops, riding ahead of an invasion force as they did during the conquest of Palestine after the battle of Ḥaṭṭīn in 1187 AD.³⁷

The most effective horse-archers, and in fact most of the

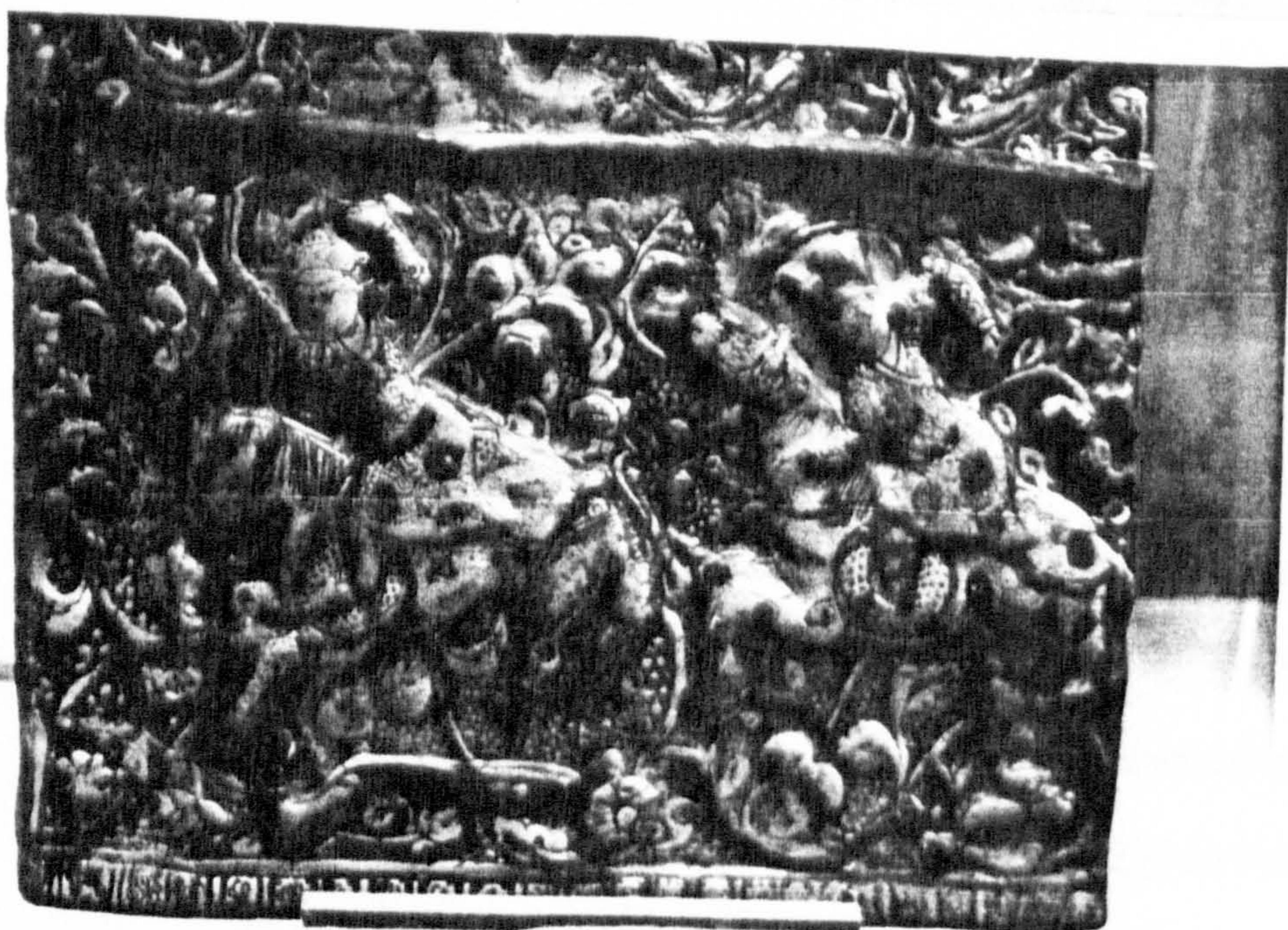
35. Gibb, "The Armies of Saladin," loc. cit.; A. S. Ehrenkreutz, Saladin, (New York 1972), pp. 51 and 73-74.

36. Ibid.

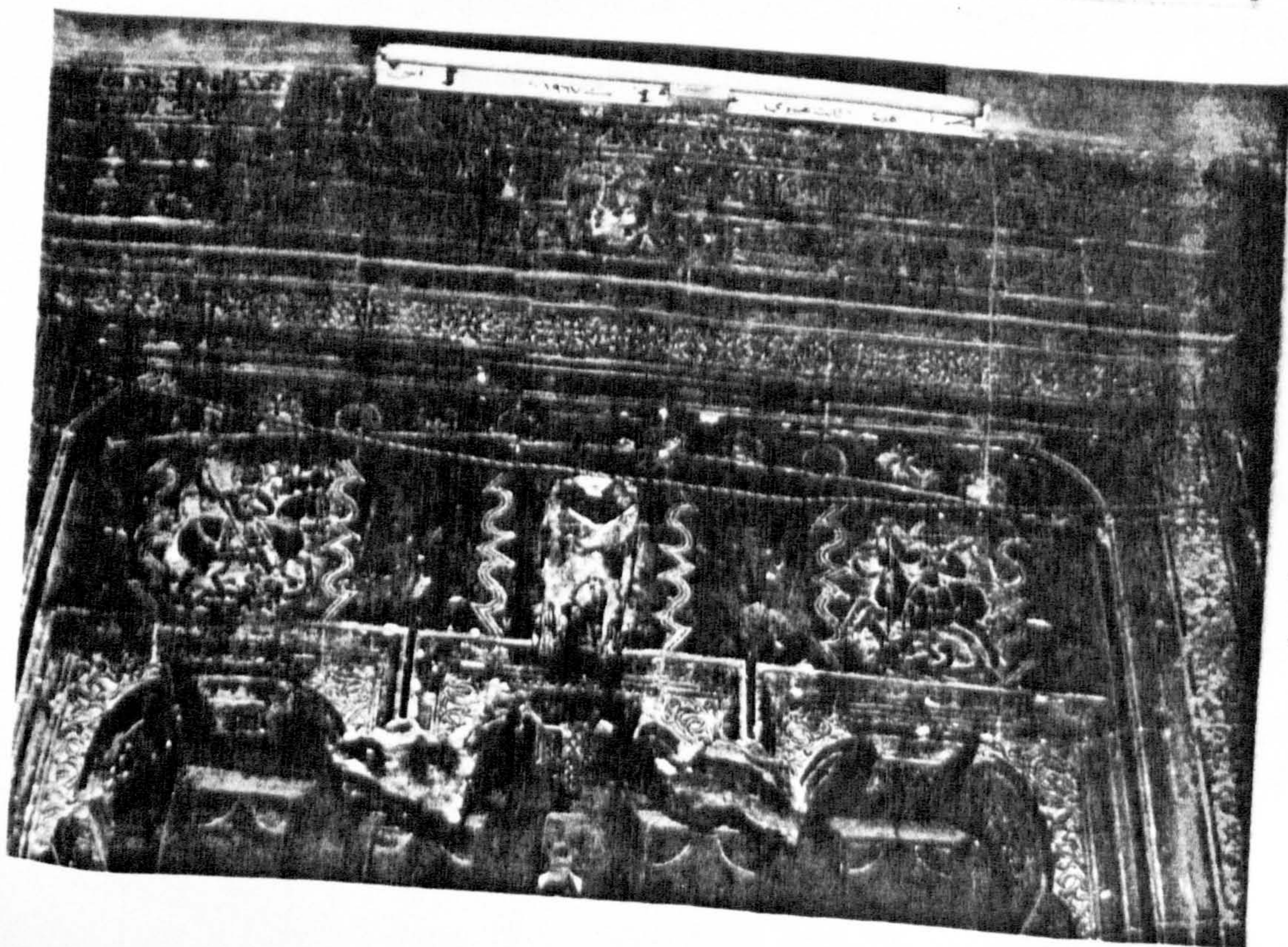
37. ^cImād al Dīn, op. cit., p. 33.



CXLIX



CL



CLI

troops, in Ṣalāḥ al Dīn's army were now the more disciplined mamlūks. They, however, seem to have used their bows in much the same way as had long been traditional in the Muslim east, though, perhaps, with a greater tendency to shoot on the move if not at the gallop. Armed head to foot, such mamlūk horse-archers could be sent ahead of each battalion as an advance guard of scouts.³⁸ Others were trained to dismount and shoot at a foe while drawn up in ranks to achieve greater range and accuracy.³⁹ If unhorsed in battle they would continue to fight first with their bows and at the last with swords.⁴⁰

Such behaviour would be in line with their training as reflected in the Ayyūbid military treatise of al Ṭarsūsī and, indeed, in later furūsīyya manuals. Al Ṭarsūsī, for example, advised a horse-archer to aim at the horse of an armoured foe but wait until an enemy cavalryman with a sword got very close before shooting as one could not afford to miss with one's first shot. If, however, this mounted foe were charging with a lance, or with a nawak arrow-guide and husbān short arrow, the horse-archer should maintain his distance or at least have sword and shield ready to defend himself. Generally speaking, the foeman with a lance was considered the most dangerous and the one who should be dealt with first.⁴¹

Oddly enough there seem to be more illustrations of mamlūk horse-archers from the later Ayyūbid era, in the 13th century,

38. Ibid., p. 19.

39. Anon., Itinerarium Peregrinorum, p. 92.

40. Bahā al Dīn, op. cit., pp. 81-82.

41. Al Ṭarsūsī, A. Boudot-Lamotte trans., Contribution à l'Etude de l'Archerie Musulmane, (Damascus 1968), pp. 142-144.

than from the days of Ṣalāḥ al Dīn himself. Their equipment would appear to have been fairly standardized, with a minority wearing heavy armour and riding horses possibly with bards and chamfrons (Figs. 129, 291, 300, 304, 307, 308 and 651). Elsewhere such horse-archers appear to use crossbows, as in early 14th century Granada, or lances. Those equipped with the latter weapon often ride heavily caparisoned or barded horses (Fig. 287).

This varied Kurdish or mamlūk cavalry, heavy and light, seem to have fought in close cooperation. Shuj^can horsemen, perhaps including the horse-archers and crossbowmen, delivered controlled charges while their withdrawal was covered by an élite of probably armoured horsemen known as abtāl. This seems to have been an elaboration of the earlier Arab karr wa farr tactic that itself perhaps reflected the Byzantine system of cursores shock-cavalry archers supported by defensores to protect their flanks.⁴²

A great many Ayyūbid heavy cavalry, excluding those from the ruler's own mamlūks, seem to have been numbered among those contingents drawn from the Jazīrah area. This was, of course, close to the homeland of the free Kurdish tawāshīs. During the siege of ^cAkkah, Mu^cizz al Dīn of Sinjār, one of the surviving Zangid rulers of this region, led a force of horsemen armed with qanāḥ lances and swords, wearing sawāḥiqh jubbah mail hauberks, and tarik helmets, possibly with crests, but with no mention of bows.⁴³ Even Ṣalāḥ al Dīn's foes noticed that the cavalry of Taqī al Dīn, the sultan's nephew, were not horse-archers.⁴⁴

42. Al Jarsūṣī, op. cit., p. 126; Bivar, "Cavalry Equipment and Tactics on the Euphrates Frontier," pp. 288-290.

43. ^cImād al Dīn, op. cit., p. 254.

44. Anon., Itinerarium Peregrinorum, p. 94.

On the other hand, the last Artuqids of H̱isn Kayfā in the northern Jazīrah may have retained the horse-archery techniques of their Turcoman forebears.⁴⁵ The late 12th and early 13th century art of this area shows warriors and equipment as mixed as were the origins of the troops using it. Those armed with spear or sword could carry shields of purely Byzantine style (Fig. 285), wear a variety of mail and lamellar armours (Figs. 286, 288 and 306), have their forefingers over the quillions of their swords in purely Iranian style (Fig. 291) and also use their lances in many different ways (Figs. 287 and 303).

Those of specifically Kurdish origin are, on at least one occasion, described as wearing dir^c hauberks and carrying large, very convex leather yalaḥ shields.⁴⁶ Elsewhere the origins of Ayyūbid heavy cavalry are not so specific, although their equipment is described in detail. The kumāh, or "veiled", horsemen fought outside ^cAkkah with swords.⁴⁷ In such actions, using swords, lutūt maces and spears, they were clearly quite capable of unhorsing heavy European knights.⁴⁸

It is rare for one minor incident and one individual warrior to be recorded in both Arab and Crusader chronicles. Yet this happened with the death of the Ayyūbid champion Ayāz the Tall during the battle of Qaisariyah on 30th August 1191 AD. Ayāz had earlier been described as fully armoured⁴⁹ and when, during

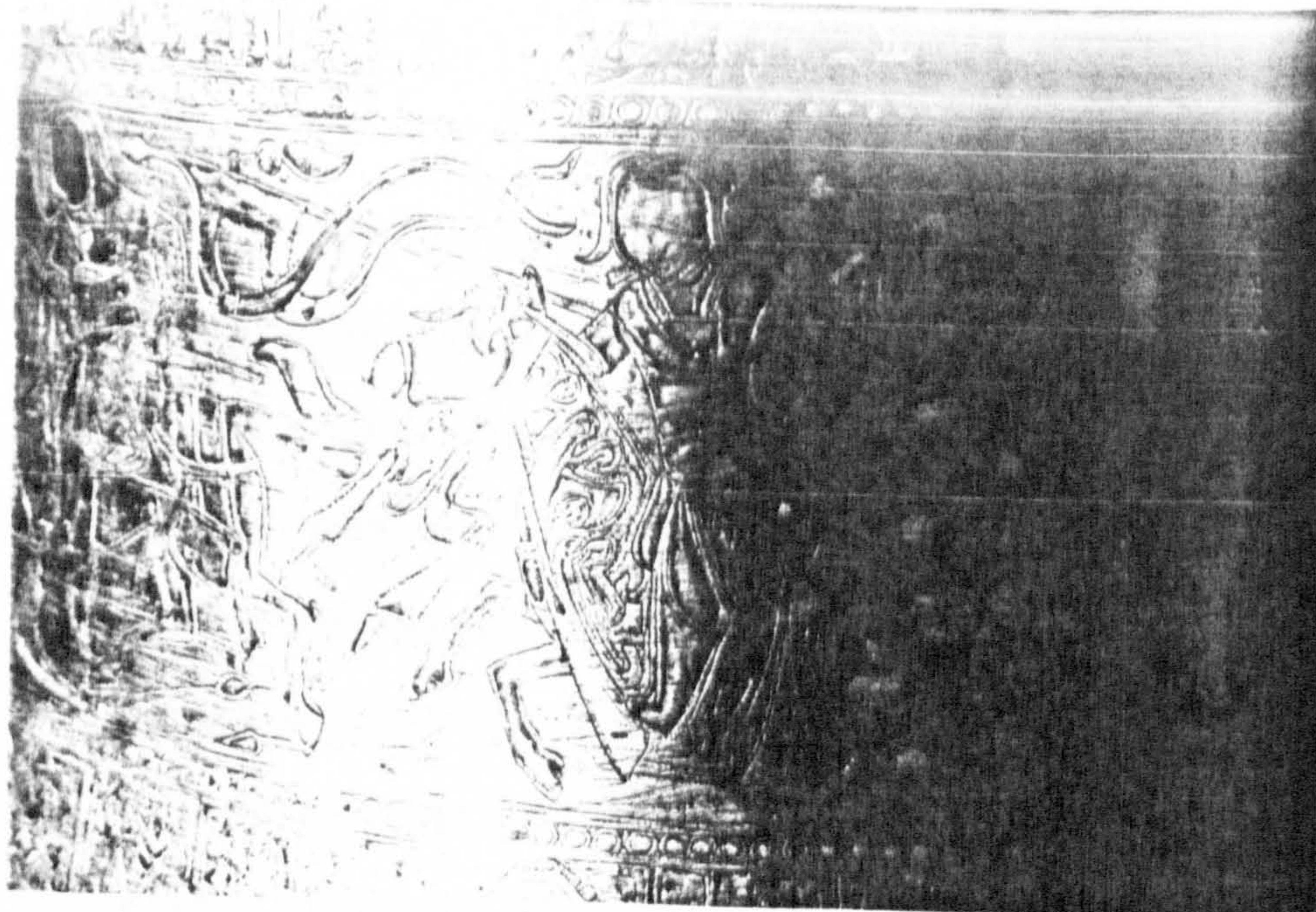
45. Mubārakshāh, op. cit., p. 268.

46. ^cImād al Dīn, op. cit., p. 375.

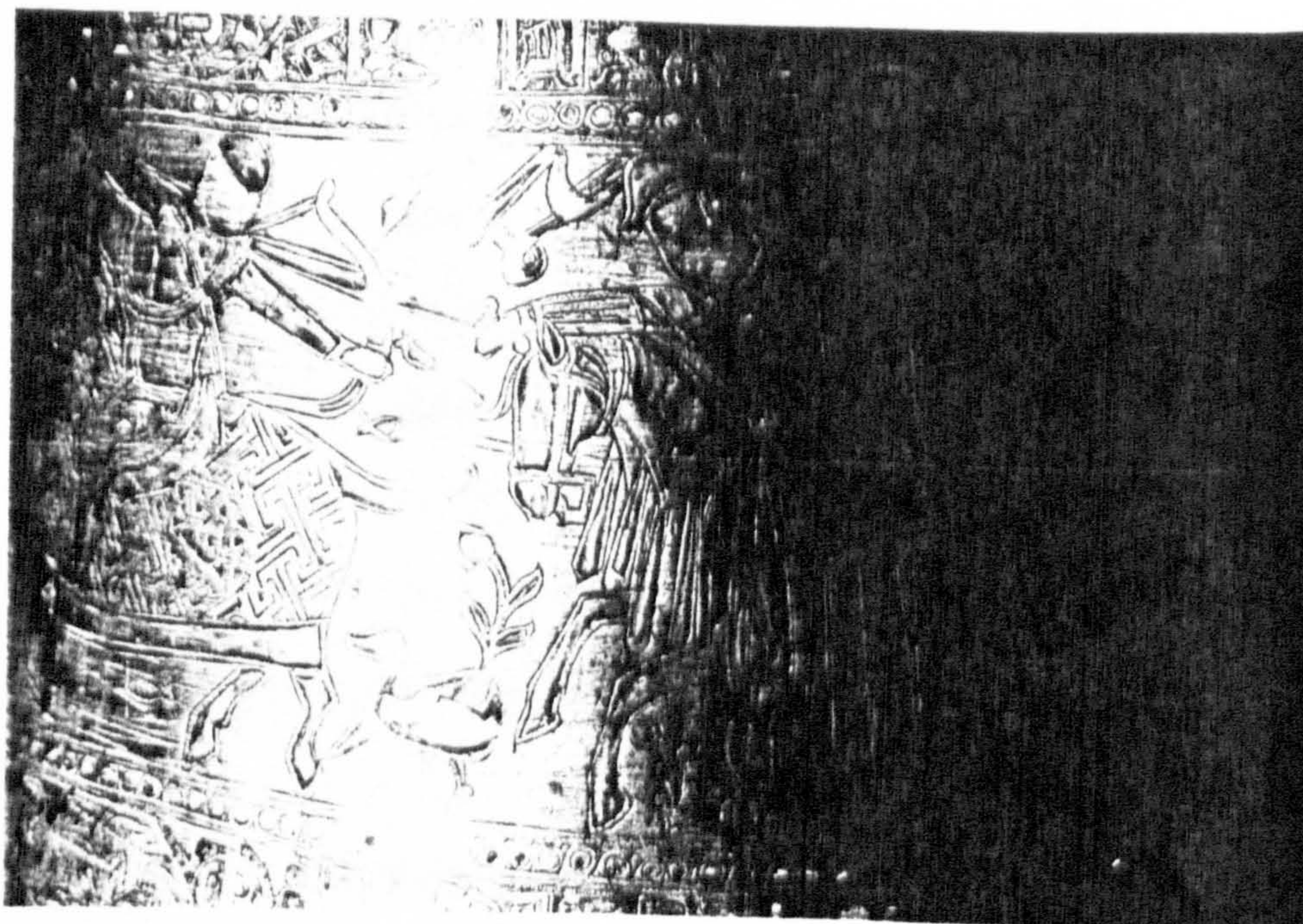
47. Bahā al Dīn, op. cit., pp. 90-91.

48. ^cImād al Dīn, op. cit., pp. 267-270; Bahā al Dīn, trans. F. Gabrieli in Arab Historians of the Crusades, p. 202.

49. ^cImād al Dīn, op. cit., p. 304.



CLII



CLIII



CLIV

this battle, he was thrown from his horse he was struck down before being able to remount because of the weight of his iron armour.⁵⁰ The rest of Ayāz's equipment included a bow, quiver, sword and a spear that was heavy enough to be noted with astonishment by his Frankish slayers.⁵¹ Comparable equipment, including mace and sword, was still used by Ayyūbid mamlūk regiments half a century later at Manṣūrah.⁵² Such heavy cavalry, mamlūk or otherwise, plus its equipment, appears in much art of the Ayyūbid era (Figs. 161, 173, 174, 300, 301 and 651).

Ayyūbid light cavalry equipment was as varied as that of heavier troops, though naturally less abundant. Those described as jarīdah carried the lightest equipment and were employed for rapid raids into enemy territory or to hold isolated outposts where they could also act as infantry.⁵³ Such troops were often Arab auxiliaries who, noted for their speed and manoeuvrability, were very effective in ambushing enemy convoys.⁵⁴ These warriors were described by their Crusader foes as despising armour on the grounds that it was an attempt to escape one's predestined day of death.⁵⁵ Other comparable troops, Arab or Turkish, were similarly lightly equipped and fought with bow, winged or knobbed mace, sword, dagger and light spear.⁵⁶ Indeed

50. Ibid., p. 381.

51. Ibid.; Anon., Itinerarium Peregrinorum, p. 84.

52. Ibn Wāṣil, op. cit., pp. 289-290.

53. Gibb, "The Armies of Saladin," loc. cit.; ^cImād al Dīn, op. cit., p. 399.

54. Bahā al Dīn, op. cit., pp. 161 and 342; Anon., Itinerarium Peregrinorum, pp. 131-132.

55. Norris, op. cit., p. 99.

56. Anon., Itinerarium Peregrinorum, p. 78.

the light spear, often of bamboo, was regarded even in early 13th century India as the typical weapon of the Arabs.⁵⁷

Illustrated sources of the 12th and early 13th centuries from Egypt and the Fertile Crescent show many lightly equipped troops, both in apparently Arab costume (Figs. 162, 310 and 325) or in probably Turkish dress (Figs. 290 and 295) or of no particularly identifiable origin (Fig. 329).

A comparable decline in the importance of nomadic Turcoman horse-archery took place in the east of Islam following the fragmentation of the Saljūq empire in the mid-12th century. In the Ghaznawid state, of course, such troops had never been more than one element in a mixed army.⁵⁸ The Ghūrids who overthrew this latter dynasty in the second half of the 12th century were famed more for their infantry than for their cavalry, yet horse soldiers did have an important part to play even in the early 12th century. At this time some were clearly heavily armoured,⁵⁹ while by the end of that century at least Ghūrīd leaders generally fought on horseback with spears.⁶⁰ Mounted troops from similar regions in Afghanistan, tājiks and khaljīs, continued to serve the subsequent mamlūk dynasty of "Slave Kings" in northern India. Here they were apparently noted for the long shamshīr swords that they kept in scabbards beneath their saddles, a fashion that may indeed have been known in the earliest centuries of Islam.⁶¹

57. Mubārakshāh, op. cit., pp. 260-261.

58. Dosworth, The Ghaznavids, pp. 109-110.

59. Mawlānā Minhāj al Dīn, op. cit., p. 351.

60. Ibid., p. 461.

61. Mubārakshāh, op. cit., p. 259; Ashgar, op. cit., pp. 137-138; Ibn Isḥāq, op. cit., p. 153.

Such saddle-swords may have been illustrated in late 12th century Turkish Azarbayjān (Fig. 422) and early 13th century northern Iran (Fig. 391). Such a weapon certainly appears on a carving of uncertain, but possibly 11th to 13th century, date at Orissa in eastern India (Fig. 491). Elsewhere, the cavalry of eastern Islam seem at this time to have been similar to those of the central regions (Fig. 369).

Apart from that uncertain carving at Orissa, which shows a bowcase on the saddle in early, almost pre-Islamic style, there seem to be no representations of horse-archery in the sub-continent during these centuries. Yet horse-archers, mamlūks rather than nomadic Turcomans, were vital to the Delhi Sultanate. Such heavily armoured troops fought with bow, spear, javelin, mace, lasso and sword.⁶² That archery had reached a high point of perfection is suggested by the great variety of arrowheads used by these warriors. Some were designed specifically to penetrate mail of the lamellar of a jaushan. Others were used against shields of wood, cane or leather or in the long-distance archery of siege warfare. Still more were designed either to pierce a quilted khaftān or similarly made horse-armour, to slay an unprotected foe, or be used against a man wearing heavy iron armour.⁶³ There is, in fact, no reason to suppose that such a degree of sophistication was not normal among all mamlūk archers, though not necessarily among the tribal Turcomans.

Further north, among those originally Turkish mamlūks and still nomadic Qipchaqs and Qanqalis who together formed

62. Ashgar, op. cit., p. 35; Digby, op. cit., pp. 15-16.

63. Mubārakahāh, op. cit., p. 241.

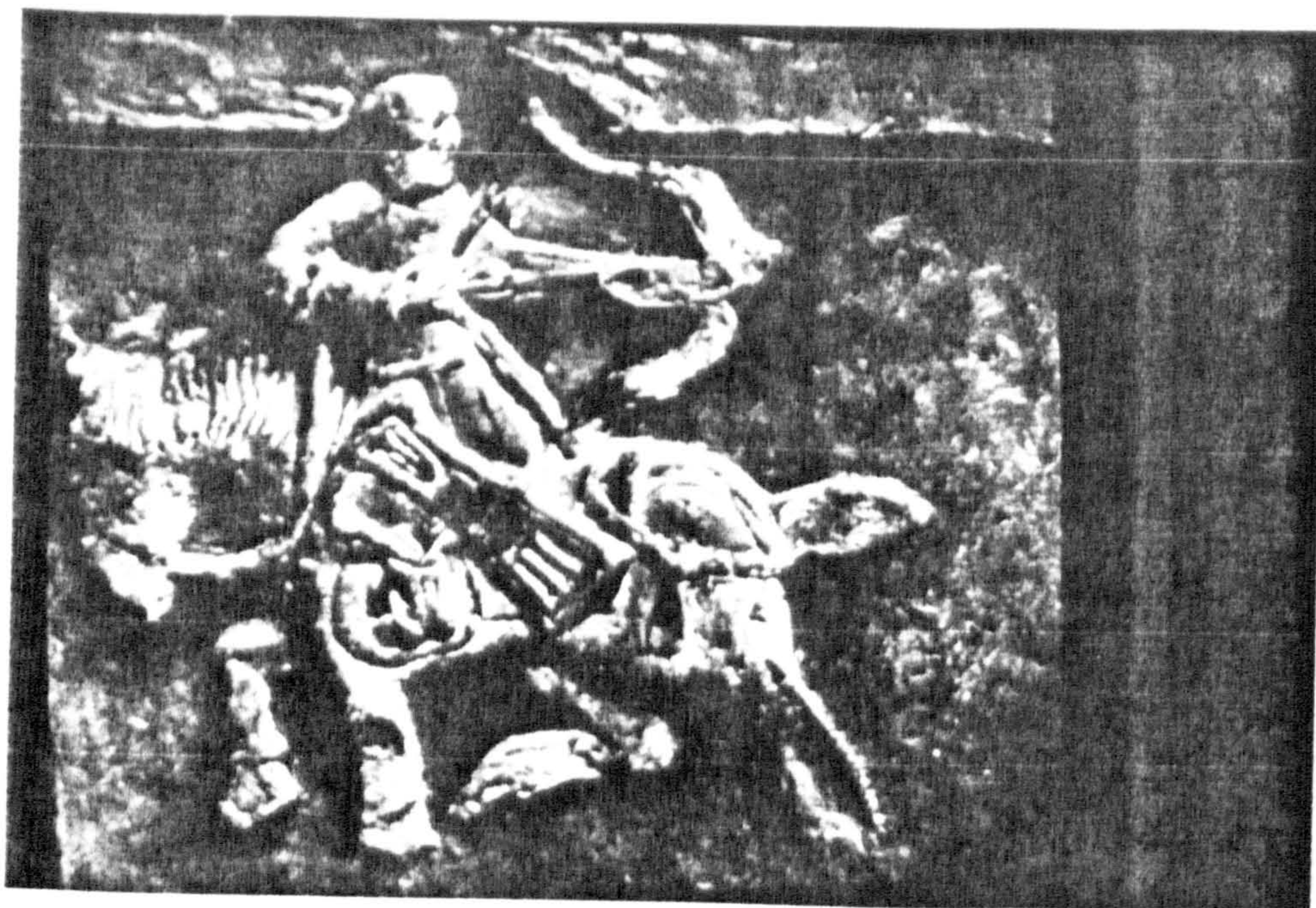
the backbone of the Khwarazmshāh's army, similar heavy cavalry apparently predominated in the early 13th century. These warriors were soon to fail against the Mongols, but in 1212 AD they succeeded in destroying the Buddhist Qarā Khitai dynasty that ruled over much of Muslim Turkistān. The Qarā Khitai could indeed have been regarded as a very Chinese-influenced vanguard of the Mongol horde that was so soon to follow. On this occasion, however, the Khwarazmshāh's army largely consisted of heavily armoured cavalry riding equally armoured horses.⁶⁴ Many may also have been horse-archers, although the nīzah spear of willow wood seems to have been a major weapon among such troops.⁶⁵

The art of mid- and late 13th century Iran generally illustrated the traditional military equipment of this region rather than that of the recently arrived Mongol conquerors. They rarely appear in such sources until the mid-14th century. Such an interpretation would seem to be supported by arms and armour in early Il-Khānid manuscript illumination.⁶⁶ This is particularly true of the so-called Red-Ground Shāhnāmāhs, most of which probably date from the early or mid-14th century. Iranian sources from rather earlier, in the 13th century, seem to illustrate cavalrymen who, though variously armed, were clearly within the Saljūq tradition (Figs. 263, 390, 392, 395-397, 400-406 and 645). In all probability the heavier cavalry of the Khwarazmshāhs, with their characteristic use of horse-armour, appear in one unique west-Iranian, though rather later, manuscript

64. Maulānā Minhāj al Dīn, op. cit., p. 262.

65. Mubārakshāh, op. cit., pp. 260-261.

66. D. T. Rice, Islamic Art, (London 1965), pp. 114-115 and 122;
E. J. Grube, The World of Islam, (London 1966), pp. 103-104.



CLV



CLVI

known as the Kitab-i Samak Ayyār (Fig. 641). Here the equipment is probably a development of both Saljūq and earlier styles, perhaps grown heavier through long experience in warfare against Central Asian nomadic horse-archers in Turkistān.

Interestingly enough, an almost exactly comparable process was once again occurring north of the Eurasian steppes, in response to the same threat that Turkish nomadic horse-archers posed. By now, of course, it was not only the Christians of Kievan Russia who were so threatened. The isolated Muslim state of Bulghār, with its well-established armaments industry at the confluence of the Kama and Volga rivers, was being squeezed between Russia and the still largely animist Tūpchaq and Qanqali nomads of the steppes. Some Bulghārs do, in fact, appear to have been converted to Christianity in the early or mid-12th century, while their primitive Finno-Ugrian forest-dwelling neighbours to the north were so converted by the 13th⁶⁷ (Fig. 635).

In 12th and 13th century Kiev itself, heavier cavalry armour, the widespread adoption of the long sabre, helmets with rigid and life-like visors, horse-armour and in particular the chamfron, and to some extent the separation of horse-archers and heavy close-combat cavalry into separate corps, were all apparent. Once again such developments are reflected in a great deal of surviving equipment from this area (Figs. 622, 625, 636 and 637), equipment that may well mirror developments to the south, judging from surviving Russian art sources (Figs. 626-633).

In a second Christian area that bordered the Muslim world, the Crusader states in Syria and Palestine, there seems by contrast

67. I. Hrbek, "Bulghār," Encyclopedia of Islam, second edition, vol. I, pp. 1304-1308.

to have been almost complete stagnation, except insofar as military changes reflected developments in western Europe.⁶⁸ During the Crusaders' first offensive phase, existing techniques proved adequate, while in the later defensive years the Franks were generally forced to rely on counter-siege warfare that left little scope for tactical innovation. Such developments as did occur, including the recruitment of turcoples, seem to have been learned from the Byzantines rather than developing as original concepts.⁶⁹ The turcoples were not horse-archers in the Turcoman, nomadic tradition, though many may have carried bows in mamlūk, Arab or Byzantine style. Their primary role seemed to have been as light cavalry who fought either as scouts and skirmishers or alongside other mounted Frankish troops⁷⁰ (Figs. 272 and 275). Even the placing of cavalry outside closely packed ranks of infantry⁷¹ may be a reflection, at least in part, of comparable tactics by Zangid forces.

While the Mamlūk state of Egypt and Syria successfully concluded the Ayyūbid offensive against the Crusaders, these Mamlūks also refined Ayyūbid developments in military technology and tactics. By the end of the 13th century, having defeated the Franks, confined the Mongols and overcome numerous lesser foes within the Middle East, they were clearly among the most successful troops in the known world. Their superior patterns of logistics, armaments, tactics and discipline were to provide the foundation of a military tradition upon which later Mamlūk

68. Smail, op. cit., pp. 113 and 116-118.

69. Ibid., pp. 111-112; Vryonis, op. cit., pp. 133-134.

70. Smail, op. cit., pp. 110-112.

71. Ibid., pp. 156-157.

and Ottoman successes were to be built.⁷²

In this not new but constantly refined military tradition, the role of cavalry was clearly paramount. Although infantry were still considered important, horsemen bore the brunt of offensive warfare and large-scale manoeuvre in which their speed, striking power and the weight of their weapons were considered superior.⁷³ Even if an army had to rely on its infantry when surprised by a foe or when drawn up in set-piece battle, the final outcome always depended upon Mamlūk cavalry.⁷⁴ Since this was their primary role, it is not surprising to find that most Mamlūk furūsiyya manuals laid greater emphasis on training in the use of the lance than on any other weapon, even including the bow.⁷⁵ Very much the same was true in early Mamlūk art from Syria and Egypt, where spears and swords are generally more common than bows (Figs. 175, 177, 178, 180, 647 and 648).

Even where archery was described, such furūsiyya manuals clearly show that it was not in the Turcoman style. Rather it seemed to be a development of earlier Byzantine and Abbāsid traditions. When shooting, the Mamlūk archer rolled up his presumably armoured sleeve to make it easier to bend his arm and also, perhaps, to avoid snagging the bowstring.⁷⁶ Although this was exactly paralleled in European travellers' descriptions

72. Scanlon, A Muslim Manual of War, p. 21.

73. Al Aqsarā'ī, op. cit., p. 325; al Anṣārī, op. cit., p. 72.

74. Al Anṣārī, op. cit., p. 107.

75. H. Robie, "The Training of the Mamlūk Fāris," in War, Technology and Society in the Middle East, V. J. Parry and N. E. Yapp edits., (London 1975), pp. 156-157.

76. Ibid., p. 158.

of the Mongols,⁷⁷ it was surely no more than a common-sense precaution to be undertaken by all archers if they were wearing lamellar armour. Not until the mid-14th century did a Muslim ^etrātise on archery put greater emphasis on shooting from horseback rather than while standing, kneeling, squatting or sitting. Most such works seemed to be more concerned about the combined use of shield and bow in sieges and set-piece battles.⁷⁸ In fact, it was apparently the practice of mounted Mamlūk archers in the 14th century to draw up in ranks, dismount, empty their quivers onto the ground and then shoot from a squatting or kneeling position. In this manner each rank protected the one ahead from being overrun by the foe.⁷⁹

Such Mamlūk mounted archers were also trained to shoot from horseback, if need be in all directions. When this was done on the move, however, it generally seems to have been done from close range as demonstrated in one furūsiyya game or exercise known as the nabaq.⁸⁰ An even closer-range type of horse-archery was practiced in the qīḥaḥ exercise. Here the target lay on the ground and was apparently shot at as the rider virtually rode over it.⁸¹ These were clearly not harassment techniques of archery. Rather they were shock tactics, and this may account for the appearance of crossbows in the hands of at least one

77. G. D. and A. M. Gaunt, "Mongol Archers in the Thirteenth Century," Journal of the Society of Archer-Antiquaries, XVI (1973), p. 21.

78. Latham and Paterson, "Horse-Archers of Islam," loc. cit.; J. D. Latham and W. M. Paterson, Saracen Archery, an English version and exposition of a Mameluke work on archery (ca. A.D. 1368), (London 1970), p. 101.

79. Ibn Khaldūn, "Muqaddimah," in Bosworth, "The Armies of the Prophet," p. 205.

80. Ayalon, "Notes on the Furūsiyya Exercises and Games in the Mamluk Sultanate," pp. 55-56.

81. Latham and Paterson, "Horse-Archers of Islam," loc. cit.

such Mamlūk horseman from a Syrian source. Among the many other illustrations of late 13th and early 14th century horse-archers from Egypt, Syria and southern Anatolia, some certainly seem to be shooting at targets almost beneath their horses' hooves (Figs. 131, 177A, 178B, 309, 650B and 652).

Of course the Mamlūk state in Egypt and Syria also employed light cavalry. Some acted as scouts, in which case they would neither wear the dir^c hauberk nor carry a turs shield but be armed only with bow and arrows.⁸² Such warriors were probably mamlūks (Figs. 177 and 179). Others, perhaps a great majority, would have been tribal auxiliaries. Here one may find the only real survival of Central Asian nomadic horse-archery, for many Turcoman as well as Kurdish tribes were paid to protect the frontiers of Syria, Palestine and Lebanon from invasion. Comparable Arab bedouin tribes were engaged to watch the borders of Syria, Sinai and Egypt.⁸³ The most readily recognizable auxiliary warriors in the art of the era appear to be Arabs, although it is also possible that some Turcoman tribes were already adopting those bedouin customs and dress that were to render them virtually indistinguishable from their fellow nomads in these regions in later centuries (Figs. 133, 311, 639 and 642).

Finally there are the Mongols themselves. Their weapons, though strictly outside the scope of this study and owing more to Chinese than to Muslim traditions, were naturally to have a profound impact upon the Middle East. Mongols were nomad horse-archers above all else, although they were competent in all forms of warfare

82. Al Anṣārī, op. cit., p. 80.

83. Poliak, Feudalism in Egypt, Syria, Palestine and Lebanon, 1250-1900, pp. 9-10.



CLVII



CLVIII

including sieges. Various features of equipment and tactics were noted both by European travellers and Muslim foes. Mongol warriors, for example, were said to use shields of wickerwork or cane only when on guard-duty and not while engaging in horse-archery.⁸⁴ They or their Central Asian allies also carried large bow-cases slung from their belts, which most Mamlūk horse-archers apparently did not. Mongol troops also had a habit of sliding their light lances beneath their saddle-girths when using other weapons.⁸⁵ Elsewhere Mongols are described as carrying one or two bows, no less than three quivers, plus an axe and a lasso. Richer warriors used slightly curved single-edged swords and rode horses protected by mail or lamellar peytrals, crinets and chamfrons though not, apparently, cruppers. Other horse-armours were of leather up to three layers thick. Protection for the rider could consist of a metal helmet with a leather aventail, and a cuirass of iron lamellae.⁸⁶

These styles would, however, not immediately appear in the art of those Muslim areas overrun by the Mongols. Nor, according to Rashīd al Dīn, would the well-established armaments industries of Iran learn to make new forms of armour for their new masters until the 14th century. Even when they did so, they also apparently continued to manufacture shields and various other items in traditional style for those local dynasties which survived under Mongol and Il Khānīd suzerainty⁸⁷ (Figs. 410, 638, 639 and 642-644).

84. Gaunt, loc. cit.

85. Al Aqsarā'ī, op. cit., pp. 328-329.

86. M. Komroff, Contemporaries of Marco Polo, (London 1928), pp. 47-48.

87. Gorelick, "Oriental Armour of the Near and Middle East from the eighth to the fifteenth centuries as shown in works of art," loc. cit.

Nevertheless, in north-western Iran the presence of a new Mongol capital city (later greatly encouraged the further development of an existing local arms manufacturing industry.⁸⁸ Sword-making had, for example, apparently been rudimentary in this region prior to 1300 AD.⁸⁹

88. Allan, op. cit., p. 67.

89. Ibid.

PART FOUR

Conclusions

CONCLUSIONS

Difficulty in the dating, and in many cases even the provenance, of source material concerned with Muslim military technology makes the drawing of definite conclusions similarly difficult. This does not, however, mean that useful conclusions cannot, or should not, be drawn. Many such conclusions will be preliminary, and most will be hedged around with qualifications. Nevertheless, these conclusions may still throw a useful light on broader aspects of Islamic and neighbouring cultures, beyond the immediate fields of military or technological history.

Muslim Military Equipment

The terminology of Islamic military equipment remains far from clear and seems likely to remain so until, and if, archaeology uncovers more surviving artifacts. The same problem plagued the study of medieval European arms and armour but has, to a substantial extent, been clarified by the recovery of an increasing number of surviving pieces of equipment. Comparable clarification has, of course, been even more dramatic where Roman arms are concerned.

Clearly a study of terminology cannot, alone, answer all the questions relating to the structure, development, changing fashions and appearances of any artifact, be it military or otherwise. Surviving illustrations can be a great, sometimes greater, help, particularly if they are reasonably naturalistic. But they must remain as a second-best alternative to surviving pieces.

Even bearing these limitations in mind, the study of the known terminology of Muslim military equipment does suggest certain important features. Iranian influences were probably much stronger in pre-Islamic Arabia than were those from the Hellenistic world.

This remained true of both the arms and the armour of the early Muslim period although the impact of Iranianized and Turkish Central Asia rapidly grew in strength. Such Central Asian influences may have begun to predominate, in all regions except North Africa and al Andalus, before the more dramatic impact of Turkish military culture following the Saljūq conquests of the 11th century. Central Asian technological and stylistic influences did not reflect the supposedly backward nomadic civilization of the steppes. Rather they reflected a combination of the advanced metallurgical techniques of both the settled communities of various Central Asian highland regions plus those of the nomadic metalworkers, and various advanced tactical concepts that had been developed in these regions.

To the west, in al Andalus and to a lesser extent the Maghrib, Europe naturally predominated where external influences were concerned. It would, however, be wrong to see these western provinces of Islam merely as the absorbers of military and technological innovations. North Africa and Muslim Spain were part of a wider Mediterranean material culture. During the early Middle Ages, with a noted expansion of their metallurgical industries under Islam, these provinces probably influenced their Christian neighbours equally as much as they themselves were influenced by those countries along the northern shores of the Mediterranean.

Such a two-way flow of ideas and influences would also seem to have been true of central Muslim regions bordering Byzantium. If one excludes the Central Asian styles that were adopted on both sides of the religious frontier, then there seem plenty of reasons to believe that the early Muslim Arab, Kurdish and west Iranian provinces were influencing the Greeks at least as much as they themselves were being influenced by Byzantium.

Certain aspects of military material culture clearly reflected one source of influence more than others. For example, Indian technology was probably the most important external influence on Arab swords during the first decades of Islam. Clearly, however, Central Asian fashions, manifesting themselves most obviously in the curved sabre, came to predominate towards the end of the period under review.

The evidence assembled in this thesis hopefully demonstrates that the sword was, throughout the centuries being considered, primarily a cutting rather than a thrusting weapon. From the 7th to 11th centuries most had relatively short, light and straight, single-or double-edged blades. These straight blades varied in outline, which in turn probably reflected their widely differing places of origin. Most were, however, of the non-tapering, relatively blunt-tipped variety. Shorter, more pointed single-edged weapons were also widespread in eastern Islam and probably resulted from Iranian influence. Most such weapons would have been varieties of khanjar.

The origins and first appearance of the curved sabre in Islam is still a hotly debated question. While I would agree that the Muslim sabre had its origins in Turkish Central Asia, and was not in widespread use until after the Saljūq conquests of the 11th century, there is evidence to show that similar weapons, which had long been known among Turkish peoples, were imported into Islam before this time. They probably arrived in very small numbers, either as booty or as the existing equipment of Turkish mercenaries or captives. From the late 11th century onwards, of course, curved sabres gradually came to predominate throughout the central and eastern Muslim lands, although straight-bladed swords did not

entirely die out.

The small dagger, from which I exclude the khenjer which was more of a short sword during the period under review, poses something of a problem. It is often mentioned but rarely illustrated. Many were, perhaps, in reality general purpose knives, only being used in combat in a dire emergency.

The mace was primarily an armour-and helmet-breaking weapon, and so the geographical limitations of its widespread use may be significant. One would generally expect to find it in regions where armour was abundant. This seems to be precisely the case in Islam from the 7th to 13th centuries where the mace is most common in the Iranian and Turkish provinces of the east. The fact that the mace is frequently mentioned in conjunction with Umayyad forces may similarly indicate that these troops both inherited and enlarged the Sassanians' known wealth of military equipment. Both literary and to a lesser extent pictorial evidence also suggests that later and more sophisticated forms of mace-head mostly had their origins in Iran or Turkistān. Thereafter they gradually spread westward, eventually as far as Christian Europe, perhaps via Muslim Sicily and Spain.

The Muslim war-axe, which only came into common usage from the 9th century onwards, seems again to have had eastern origins. Only the siyābihah and the nāchakh can, however, be pinned down more precisely, to Armenia and India respectively.

The lance was traditionally regarded as a warrior's most reliable weapon in the Arab world throughout our period. Its status was almost as high among Iranian warriors and it was certainly not neglected by the nomadic Turks, despite their primary reliance on horse-archery. All these peoples used the weapon in a variety

of ways when mounted and did not depend solely on the couched lance, as most of their later medieval European foes came to do. Muslim cavalry spears were normally shorter than those of the infantry, which probably indicated that the latter generally used such weapons as pikes. This in turn presupposes disciplined infantry formations fighting in ranks. The qanāh, the longest Muslim spear to be in general use, started out as an infantry weapon but was later adopted by some horsemen, among whom it was contrasted with the shorter and stouter nuntāriyah which was of Romano-Byzantine origin.

Pole-arms for cut and thrust, almost invariably used by infantry, are perhaps the least clear forms of staff weapons in classical Islam, as they are in medieval Europe. They existed from the earliest Muslim centuries, however, and this fact, despite their as yet uncertain sizes or forms, is further evidence of the importance of infantry forces in early Islamic armies. Their subsequent use, though again in an unclear form, similarly reinforces the continued role of Muslim infantry.

A clearly documented continuing reliance on javelins in many parts of the Muslim world may, in the case of foot soldiers, similarly indicate a number of factors. It could reflect the limited development of infantry archery, although this would seem to be contradicted elsewhere, or it could suggest the continuing importance of large and disciplined infantry forces who used javelins against both cavalry and other infantry. If this was the case, then the traditions of the Roman legion, modified perhaps out of recognition, lived on in the world of classical Islam much as they did in the armies of Byzantium at a time when the armies of western Europe were little more than a rabble of individual

warriors.

The popularity of the javelin among Muslim horsemen in the Maghrib and al Andalus almost certainly reflects a relative lack of armour in these regions, just as the later introduction of heavier, more specialized armour-piercing infantry javelins in al Andalus charts a steady increase in such body protection in this province, or at least among its Spanish foes.

The Arabs were famed as infantry archers before the coming of Islam, but this reputation probably applied to the tribes of the Fertile Crescent rather than of the Hijāz or Yemen. Early Islamic references to the size and penetrating power of Arab arrows, when compared to those of their Iranian foes, suggests that these northern Arabian tribes were more influenced by Byzantine archery than by that of Iran which was itself under strong Turkish influence. Nevertheless, Central Asian influences soon came to predominate in the eastern and central Muslim provinces, together with a widespread adoption of various Turkish military fashions and tactics. Meanwhile, however, the weight of Turkish arrows itself increased in response to the growing effectiveness of body-armour.

The arrow-guide, which could be regarded in some ways as a precursor of the crossbow, has unclear origins, despite various myths. However, it certainly either entered Islam from the east or was known in Iran at the time of the Muslim conquest. Thereafter this weapon seems to have spread no further west than Egypt. The true crossbow has a more complicated history, in Islam as elsewhere. It too came from the east, perhaps originating in China, and thereafter seems first to be recorded in 10th century Iraq and Iran. But the weapon was also known in al Andalus where the evidence could indicate a Christian European origin. Of course,

the hand-held crossbow had been known, at least as a hunting weapon, in late Roman Provence. So perhaps it survived in western Mediterranean Europe throughout the so-called Dark Ages to reemerge in early medieval al Andalus. Such a scenario would suit the story of *the* medieval European crossbow, in which there is no evidence to indicate that it reached Christendom via Islam.

The existence of the large frame-mounted siege crossbow in both the Hellenistic and Roman worlds, and its continued use in Byzantium and then Islam, does not seem to have had a direct bearing on the development of the hand-held weapon. The gradual, though not entire, abandonment of such torsion-powered siege-engines by Muslim armies in favour of counter-poise mangonels is easier to chart. The man-powered mangonel again seems to have been of Chinese origin, but the counterweight trebuchet first emerged in the Middle East, probably in the 12th century. As yet, however, it is impossible to state with any certainty whether Islam or Byzantium could claim its invention.

The exact meanings of terms relating to armour changed slightly during the period being studied. Generally, the trend was for a word that originally had a specific meaning to be used more loosely as time passed.

Plate armour was very rare in the first century of Islam and thereafter probably disappeared entirely. Such armours had similarly disappeared from late-Roman and Dark Age Europe. As this process nowhere reflected a technological decline, it must therefore have resulted from changing military needs, such as a demand for greater speed, lightness and manoeuvrability.

Flexible armours seem to have been regarded as the best protection in the military circumstances of the 7th to 13th centuries,

in Islam as in Europe and the Far East. Such armours were not necessarily very light, whereas soft armours of felt, quilted material and some forms of leather, normally were. The widespread popularity of these latter, although in some provinces betraying a local poverty in metal resources, generally seems to have reflected a current tactical emphasis on speed of manoeuvre.

It is also worth noting that, under most circumstances, flexible though not soft armours provided better protection against missiles such as arrows than did rigid plate armours. Today, of course, bullet-proof vests operate on the same graduated shock-absorbing principle. So does the latest generation of tank armour, though in a somewhat more sophisticated form.

Scale armour, like lamellar but unlike mail, offered just such graduated shock-absorbing protection. Its popularity in early Islam, which continued in the western provinces even after lamellar armour had been widely readopted in the east, paralleled the greater emphasis given to archery in Islamic warfare than was given in that of nail-dominated western Europe. Scale armours, of which the basic dir^C was the most widespread form, probably remained the most common type of armour in central and western Muslim regions until the 11th or even 12th centuries.

Lamellar almost certainly originated in the ancient Middle East but it had become far more characteristic of eastern Iran and Central Asia by the time of Muhammad. Its subsequent steady spread back towards its place of origin so closely paralleled the spreading domination of Turkish troops that a link between these two trends can hardly be denied.

Mail remained the best protection against a cutting rather than a penetrating blow and was, of course, even more effective

if worn with a soft armour to absorb the shock of that blow. For this reason mail was popular in all regions. It was not, of course, equally widespread throughout Islam for the simple reason that the construction of mail demanded greater technological expertise and a larger number of basic resources than did the construction of scale or lamellar armours. Thus it was more abundant in areas that were either rich enough to import it or had facilities to manufacture mail in large quantities.

Islam appears to have been in advance of western Europe in the field of protection for arms and legs during the period under review. While generally on the same technological level as Byzantium, the eastern Muslim provinces may have enjoyed some advantage because of their proximity to those Central Asian cultures where sophisticated limb defences had long been in widespread use. The very fact that such items of armour were more common in Central Asia than elsewhere probably reflected the greater limb-severing capabilities of the curved Central Asian sabre. This greater capability, which contrasted with the bludgeoning, armour-breaking emphasis of the medieval European broad-sword, was to be reflected in the sabre-fencing styles of later European cavalry regiments. It continues to be emphasized in the cut-and-slice strokes of the modern sport of kendo, particularly the kote cut which is aimed at the opponent's wrist. It may be relevant to note that the sa^cad, or vambrace, which protected exactly that part of the lower arm most vulnerable to a typical sabre-cut, was most common in provinces and periods where and when the curved sabre is believed to have been adopted.

Leg armour remained rarer than arm-protection from the 7th to 13th centuries, although the saq, as a protection for the thighs,

was useful for a horseman, particularly if he was fighting an opponent armed with a lance. Heavy cavalry boots seem generally to have sufficed as protection for the lower legs, which might indicate that horsemen were not normally expected to remain in a close-combat *mêlée* with any but totally disorganized infantry.

The variety of terms relating to Muslim helmets seems to have reflected a genuine variety of forms and methods of construction. The baydah was probably not a segmented spangenhelm, which normally gave a pointed rather than "egg-shaped" outline. It may, however, have originally been of that basic two-piece construction typical both of surviving late-Roman helmets and of a style known as the "Parthian Cap" which continued to be used by the Sassanians. The tark seems, however, to have been a spangenhelm. Most evidence suggests that the spangenhelm did have Central Asian origins, while some linguistic evidence points in the same direction for the tark. The nighfar was clearly a coif, probably of the separate form which was only to appear in northern Europe in the 12th century and which may in this latter instance be a reflection of Muslim influence. The khud is less clear and all that can be safely said of it is that the khud was partly, or perhaps sometimes even entirely, made of hardened leather. As such it could be a version of the spangenhelm having cuir-bouilli segments, or have been a head protection moulded in one piece from cuir-bouilli.

Muslim shields were more varied both in shape and in construction than were those of contemporary Europe. Some, like the large round turs, were normally of laminated wood, generally plane or poplar. The daragah was smaller, distinctly convex and should perhaps most accurately be described as a hand-held buckler. Occasional references to a metal daragah during this period almost

certainly refer to such shields having large metal bosses or metal rims and reinforcements, or at most a protective layer of metal plates. The construction of wholly metal shields, even small bucklers, would not only have been probably beyond the technological capabilities of the time but, before the introduction of fire-arms, would have been largely pointless.

Kite-shaped shields, their origins and spread, provide an arena of dispute comparable to that surrounding the curved sabre. While it is generally assumed that these had a western European or Byzantine origin, there is now evidence to suggest that a kite-shaped tārinah shield originated independently in eastern Islam. It may even have been the prototype of those seen in Byzantium and Europe.

Horse-armour poses one particular and overriding problem from the 7th to 13th centuries. While it is frequently mentioned in the written sources, sometimes in great detail, it is almost completely absent from the pictorial record. The widely used term of tijfāf would seem to refer to felt or quilted bards such as those seen on early Sassanian Iranian sources. More substantial horse-armours became popular to the west and east of Islam during our period, in Byzantium and in China. Some Islamic written sources seem to refer to comparable lamellar or scale horse protections but that is as far, so far, as the evidence goes. The separate adoption of heavy mail bards in al Andalus and to a lesser extent the Maghrib during the 13th century formed part of a short-lived but pervasive spread of European, essentially French, military styles in these far western provinces.

Having looked at each group or class of military equipment separately, a number of general trends become apparent. As might

have been expected, the military technology of pre-Islamic Arabia betrayed influences from both the Romano-Byzantine and Iranian worlds, the former being most obvious in the north, the latter in the east and south. Characteristics that seem to be purely local, such as a suggested preference for cumbersome scale armours, might indicate technological backwardness or poverty in some basic resources. They are, however, just as likely to reflect local combat styles such as the role of champions, relatively static infantry battles and the very limited development of cavalry. During this period the Arabs probably relied largely on war-gear manufactured locally at such centres as Duma in the north, in the Hijāz and above all in Yemen. Swords were clearly imported from India and other equipment was likely to have been acquired, by one means or another, from neighbouring arms-producing centres including Damascus, Antioch, Edessa, the Armenian highlands, Azarbāyjan and Fārs.

During the greatest era of Muslim expansion, under the Rāshidūn and Umayyad Caliphs, these and many other established arms-producing regions were overrun. Nevertheless, the Caliphate's most important arms-manufacturing centres remained on the periphery, in Afghanistan, Turkistān, northern Iran, the Caucasus and Armenia. Comparably peripheral, though less important, centres appeared in the west, in Morocco and al Andalus. Arms were, of course, produced in the central provinces, particularly those with large settled populations such as Egypt, Syria and the Jazīrah, Iraq and Fārs. With the exception of Fārs these centres seem largely to have relied on imported raw materials or on imported partially-completed items which ^{could} be finished in local workshops.

Such an industrial pattern, when added to the widespread and

effective long-distance trade network which was then so characteristic of the Caliphate, not to mention the vital military role of mercenaries drawn from many far-flung provinces, meant that new military fashions spread rapidly. The adoption of Turkish, that is Central Asian, styles throughout most of the eastern half of the Muslim world was, in the first instance, a response to the effectiveness of such styles. But it seems to have been equally true that the effectiveness of Central Asian troops was, in large measure, itself a result of the quality and abundance of their equipment. Hence the popularity of such items as the latest version of composite bow, lamellar armour, ... spangenhelm and sabre was justified both by their quality and their results. A similar, though rather later, infiltration by non-Islamic fashions across the Muslim frontier was seen in the far west and initially stemmed from France. This infiltration was, however, limited almost entirely to al Andalus and had, in any case, already been preceded by a strong Muslim influence upon Mediterranean Europe from the 8th to 10th centuries.

Bearing such a scenario in mind, it is interesting to note that of the Eurasian world's three most important arms-producing regions, one lay just beyond the Muslim frontier and stretched from Bordeaux to Passau, one lay astride and beyond the Muslim frontier in Transoxania while the third, although located in southern India, remained in close maritime commercial contact with the Muslim heartlands of Iraq and Egypt. Of these three, the Franco-German industrial belt powered the medieval European military civilization that so influenced al Andalus, the Turkistanī centres fuelled a persistent Central Asian influence upon eastern Islamic military technology, while India had been influencing Arabia since pre-Islamic times.

Tactical Developments and Military Technology

The first wave of Islamic conquest and the establishment of the Umayyad Empire resulted from Arab infantry victories. More specifically this stemmed from a reliance on mounted infantry tactics in which camel-riding Arab warriors achieved greater strategic mobility than did most of their foes. But such a strategy was hardly a result of preference. Rather Arab reliance on infantry reflected Arabia's original *lack of* horses. There is also evidence to suggest that the first Muslim armies were, in contrast to their poverty in horses, relatively rich in equipment such as arms and armour.

Evidence of the vital role already played by Arab troops from the Fertile Crescent and northern Arabia in warfare between the Romano-Byzantine and Iranian empires indicates that such troops could be more than an ill-equipped rabble of tribal auxiliaries. The same might have been true of southern Arabia where the two rival empires were again in frequent competition. A high degree of commercial and cultural contact between northern and southern Arabia in late pre-Islamic times is also likely to have enabled Romano-Byzantine and Iranian military influences to permeate the peninsula. Yet the latter source of influence seems to have dominated, which is hardly surprising as, from the 5th to 7th centuries, Sassanian Iran was also influencing Byzantine military styles rather than the other way around.

The clan or tribal arms stores apparently owned by leading families in the Hijāz, and presumably also in other settled commercial areas along the main caravan routes, ensured these merchants their domination over such trading arteries. They were replenished or increased by tribute and importation, while the equipment involved

almost certainly included both local manufacture and material from neighbouring arms producing regions.

Any presumed abundance of military equipment enjoyed by the first Muslim armies must have been increased as Islam conquered mineral-rich and militarily sophisticated lands like Iran and Transoxania. What the Caliphate could not expand, however, was its reservoir of Arab military manpower. In the mid-7th century the Umayyads introduced the jund or regional armies in an effort to solve this problem. Such forces may have been inspired by the Byzantine system of themes, or by a similar military organization already established in Sassanian Iran. At this time Arab armies included an increasing proportion of cavalry since wide horse-raising lands had been occupied. Many of these horsemen were not Arabs for the Caliphs were already finding it necessary to recruit from among newly conquered peoples. Such recruitment was the most obvious channel through which the military traditions of these conquered cultures were to influence the military technology of early Islam. Iran, Central Asia and the Maghrib provided the bulk of such non-Arab troops. The former two were also to have the greatest impact on Muslim military technology. Nevertheless, every province had some influence, however small or localized.

Syria's impact was minimal, largely because the military sections of its population were themselves either Arab, and were thus already within the Arabian military tradition, or they fought in basically the same way as did the Arabs. The population of Byzantine Egypt was largely demilitarized and remained so under the Umayyads, while those sections who did have military or police functions were virtually indistinguishable from the Byzantines in equipment and tactics. The Nubians were far from pacific, but their

traditions seem largely to have lain within a wider North African military culture while their influence was almost entirely limited to Egypt.

The Berbers of North Africa played a major, if largely localized, role in the military history of classical Islam. Yet their traditions appear to have been backward, perhaps even primitive, while their equipment was, for many centuries, clearly both simple and sparse.

Armenia's influence was more noticeable. Nevertheless, it is hard to isolate as Armenia's own military traditions were, not surprisingly given its location and recent history, largely an amalgamation of the Romano-Byzantine and Iranian schools. Byzantine influence as such has probably been greatly over-emphasized and this may be due to two factors. The first seems to be an apparent Byzantine ethnocentricity which often tended to assume that any similarities between Byzantine Romano-Hellenistic civilization and those of its "barbarian" neighbours was due to the latter copying the superior culture of Constantinople. At least in military matters it is, by contrast, clear that Byzantium was the adopter and modifier of "barbarian" ideas during the so-called Dark Ages. A second factor that might have contributed to the inflation of Byzantine influence may be that Europe and European scholars have inherited a great deal of this Byzantine, Roman and Greek Euro-centricity.

The Visigothic inheritance in the Iberian peninsula had a profound influence on subsequent Muslim civilization in al Andalus, particularly in the military field. This certainly contributed to the many European features in medieval Moorish military tradition. Yet it was, nevertheless, limited almost entirely to al Andalus.

Iranian, or more specifically Sassanian, military influence

was more fundamental and much more widespread. It was felt in the tactics and equipment of Islamic cavalry from the 8th to 11th centuries, particularly of heavy cavalry fighting with spear and sword though less so in horse-archery. Yet Iran had itself largely been importing military innovation rather than originating it for many centuries. The source from which the bulk of such innovation sprang was Central Asia. This latter region was to have by far the most dramatic, fundamental and long-lasting influence on Muslim military technology during the period under review.

The influence of Turkistān is apparent in Muslim armour, above all in lamellar, in weapons including horse-archery equipment and the curved sabre, ^{and} in tactics, primarily of course relating to horse-archery. Most Muslim armies, at least in the eastern and central provinces, also either came to be dominated by Turks or would include Turks as a major ethnic component. From uncertain and minor beginnings early in the 8th century through to the early 11th century this Turkistānī influence largely came from the settled and urban populations of Islam's Transoxanian frontier. Later, with the Saljūq invasions, nomad Turcoman influences grew more important.

Finally there was India. Like those of Visigothic Iberia, Indian influences were very localized, hardly extending beyond Afghanistan. One exception would seem to have been in the realm of war-elephants. Wherever these appeared in eastern Islam, an Indian connection, either through those warriors who rode them or in those mahouts who controlled them, is almost always to be found.

Perhaps the most noticeable change in Muslim tactics from the late 8th to 10th centuries was the increasing importance of heavy, that is fully armoured, cavalry. While the influence of

Iranian cavalry tradition and the increased availability of horses were fundamental to this development, the adoption of the metal stirrup early in the 8th century was perhaps even more important. This adoption took place, as far as Islam was concerned, in Khurāsān or Transoxania as a result of contact with Turks who had already adopted metal stirrups. It seems, however, likely that the Arabs already knew of the leather or rope loop-stirrup although they did not make widespread use of it. Only the rigid metal stirrup could, however, enable a fully armoured man comfortably to stand in his saddle, which was itself being greatly improved around this time. This ability to stand, of course, greatly enhanced the striking power of a horseman armed with spear or sword. It made far less difference to the horse-archer.

An enhanced close-combat capability was in turn basic to the new role of Islamic armoured cavalry, particularly to the Arab and Khurāsānī horsemen of early ^CAbbāsīd armies. This role was now to engage enemy infantry directly, whereas in preceding centuries cavalry had largely remained as skirmishers or scouts and could only be used effectively as shock troops if the opposition had already become fragmented, disorganized or very demoralized.

The Turkish 'so-called "slave army" of ghulāms that had such an important political impact on the 9th and 10th century ^CAbbāsīd Caliphate consisted primarily of heavily armoured horse-archers. Like most mamlūk soldiers, they were trained in many skills, including swordsmanship and lance-play, in addition to archery. It would also seem possible, indeed likely, that the heavy cavalry that spearheaded Byzantium's military resurgence during the 10th century was inspired by these or comparably armoured Muslim cavalry as much as by the mailed horsemen of western Europe. Byzantine

offensive tactics certainly had a great deal in common with ^CAbbāsid mamlūk tactics as well as with those of the preceding Umayyad era. There were similarities in equipment, particularly in armour for both man and horse. ^CAbbāsid ghulāms had a similar, and far less arguable, influence on the armies of rising Muslim powers such as the Fāṭimids, the Būyids and various local dynasties in the Fertile Crescent. Nevertheless, the fragmentation of the ^CAbbāsid Caliphate also led to a revival of lightly equipped cavalry, particularly in areas without established armaments industries, probably as a result of a breakdown of trading patterns, reduced state incomes and the drying up of mamlūk recruitment. Each factor was, of course, of differing importance in each area depending on local circumstances.

The increased importance of cavalry during the centuries of ^CAbbāsid power and of the subsequent successor states from the 10th to 13th centuries did not mean that infantry disappeared. Their role remained vital in many spheres of combat. Preceding Umayyad infantry tactics remained little changed in open battle while in siege warfare there was increased sophistication with the development of more refined siege engines and, above all, of oil-based fire weapons. Most infantry were recruited on an ethnic basis, the Daylamīs being a prime example, although there was also a growth of local militias such as the ahdāth in areas such as Syria and the Jazīrah. A number of dynasties either sprang from such infantry forces or at least owed their initial success to a close association with warlike populations who exported large numbers of infantry mercenaries. Examples include the Būyids, the Ghūrīds and the Nurāshīdūn.

The essential role of Muslim infantry naturally persisted throughout the Crusading era, particularly when the Frankish states

were forced onto the defensive behind a network of elaborate fortifications.

The general trend of military history, as well as technological and tactical developments, in al Andalus was different from that seen elsewhere in the Muslim world from the 8th to 13th centuries. Muslim al Andalus and the minor Christian states to the north both inherited a Visigothic military tradition which, though not the same as that seen elsewhere in western Europe, was still essentially within the overall European tradition. Subsequent waves of French influence washed over the entire Iberian peninsula and seem to have had a greater impact even in the Muslim zone than did those waves of Berber influence that were washing in from the south. By the 12th century most strictly Andalusian warriors were virtually indistinguishable from their Christian foes. Their essentially European equipment of heavy armour and heavy lance, plus the central role of heavy cavalry shock tactics that went with such arms and armour, persisted throughout the 13th century. This was despite the existence in al Andalus of separate and almost entirely differently equipped and trained Berber armies during the same period. Only after the end of the period under review, early in the 14th century, was a reaction against these "Christian" military styles seen in the surviving Muslim bastion of Granada.

The widening differences between the military tactics and equipment of western and eastern Islam increased greatly following the Saljūq conquests of Iran, the Fertile Crescent and Anatolia. A subsequent Turkish military domination over Egypt, brought about by the Ayyūbid take-over of that country, also contributed to these divergencies. Central Asian nomadic horse-archery techniques had, of course, influenced the Muslim world since the 8th century.

But until the 11th century this influence had been relatively minor. It was, in fact, merely a continuation of those mutual influences between the settled civilizations of the Middle East and those of nomadic Turkistān which had gone on for a thousand years. The Saljūqs broke this pattern by not only conquering large parts of the settled zone but also by bringing with them the families, tribes and flocks that enabled them to become a new and self-sufficient element within the world of Islam.

Nevertheless, with the possible and partial exception of the Saljūq sultanate of Rūm, the true nomadic Turcomans lost their military predominance within the century. Traditional Muslim armies, traditionally recruited though now with a stronger Central Asian influence in their tactics and equipment, returned to the centre of the military stage from Egypt to northern India. The Turcomans themselves joined a previously dominant military elite, the Bedouin Arab tribes, as little more than a source of auxiliary troops.

The Mongol conquest of parts of eastern Islam led to a further, but again relatively short-lived, pre-eminence of nomadic Central Asian horse-archery techniques in these areas.

In conclusion, the evidence presented in this thesis could be interpreted as indicating that while eclecticism and an ability to absorb new ideas from both conquered and rival cultures was a basic feature of Islamic military history, a strong element of continuity was also present. This element, or mainstream as it might be termed, was already apparent in Umayyad times. It was most persistent in the fields of tactics and organization, to a lesser extent in recruitment and also, though again to a lesser extent, in equipment. The basic characteristics of Muslim warfare, at least so far as the large, established, dynastic states of the Middle

East were concerned, sometimes evolved rapidly, as with the early 'Abbāsid recruitment of a largely mamlūk army or with the Saljūq conquests of the 11th century. Normally, however, such evolution was far slower. The effectiveness of this basic tradition is indicated by its very persistence and by the fact that it was continued, first by the Mamlūk Sultanate of Egypt and later by the Ottomans, without fundamental or dramatic change until the 18th century. It also brought the forces of Islam to the very gates of Vienna.

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